

# Manufacturers Record

Reg. U. S. Pat. Office

## Industry Construction



BALTIMORE, MD.

JANUARY 7, 1932

INDIANA LIBRARY

JAN 8 1932

## Value of Good Roads

One of the best investments this nation has ever made has been the building of good roads. It has made possible our great motor vehicle industry, furnishing employment to millions of people directly and indirectly, and consuming a high percentage of the products of many lines of manufacturing. More than 4,000,000 people are directly employed in manufacturing, servicing and operating motor vehicles.

The automobile industry is the largest consumer of the following products, using 57 per cent of the steel strips produced in the United States, 30.5 per cent of the bars, 25.8 per cent of sheets, 53 per cent of malleable iron, 85 per cent of gasoline, 82.6 per cent of rubber, 60 per cent of plate glass, 30 per cent of nickel, and 26 per cent of lead. In addition the industry consumed 18 per cent of the hardwood, 51.4 per cent of leather upholstery, 17.4 per cent of aluminum, 14.8 per cent of copper, 11 per cent of tin, and 9.3 per cent of cotton.

Without good roads automobiles and motor trucks would be fewer in number. They would have a limited use and their cost of operation would be high. Modern highways have made possible great suburban developments and enhanced property values wherever they have touched.

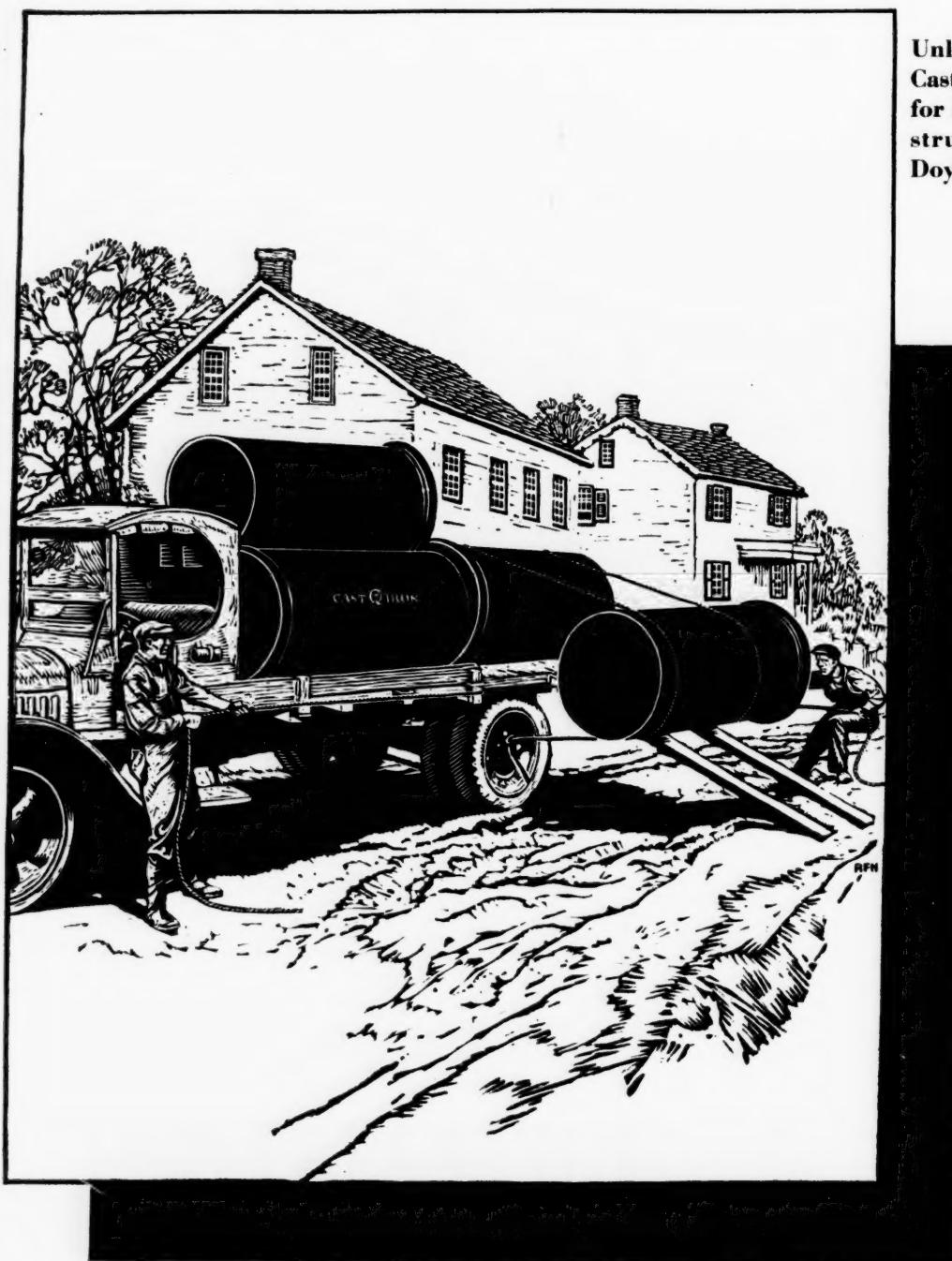
Hard surfaced roads have saved taxpayers more money than they have cost. Tests have proved that the operating cost of motor vehicles running over hard pavements instead of dirt roads is reduced more than two cents per mile in the saving effected by lower gasoline and oil consumption, less tire wear and repairs. If all the 26,000,000 automobiles used hard surfaced roads alone for their present average of 5000 miles a year, there would be saved about \$3,000,000,000 annually. We have been spending approximately \$1,500,000,000 each year for road building and maintenance; but based on the more than two cents a mile saving in operating cost when hard surfaced roads are used we can well afford to substantially increase our expenditures.

Even under present depressed conditions when it is necessary to hold public expenditures to a minimum, it is unwise economy to curtail road building and especially when advantage may be taken of the present low cost of materials and construction. Proper maintenance of roads now in existence is equally essential to avoid loss of at least part of the capital investment which has been made.

This country has set about a good roads program that brings to its people the advantages of easy communication and greater enlightenment. There should be no doubt about the wisdom of it nor its fulfillment.

ANNUAL HIGHWAY REVIEW NUMBER

**Unloading U. S.  
Cast Iron Culverts  
for highway con-  
struction near  
Doylestown, Pa.**



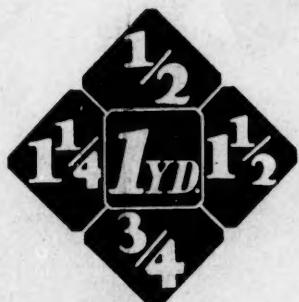
*Our pipe bears  
this trademark  
of The Cast  
Iron Pipe Re-  
search Associa-  
tion.*

With a 1½ billion dollar highway program, efficient highway drainage is an ever-present problem. There is one kind of culvert known to withstand rust and corrosion, quick changing temperatures, heavy fills—a *U. S. Cast Iron Highway Culvert*. Furnished in 3 ft., 6 ft., 9 ft., 12 ft. and 18 ft. lengths. Easily handled without specialized labor or equipment. Designed to comply with the specifications of state highway departments. Quick shipments from our plants and storage yards located at 15 strategic distribution points throughout the country. Ask for booklet.

**UNITED STATES PIPE AND FOUNDRY COMPANY, BURLINGTON, N. J.**  
SALES OFFICES: NEW YORK, BUFFALO, CLEVELAND, CHICAGO, PHILADELPHIA, PITTSBURGH,  
DALLAS, BIRMINGHAM, KANSAS CITY, MINNEAPOLIS, SEATTLE, LOS ANGELES, SAN FRANCISCO

# U. S. CAST IRON PIPE

Manufacturers record



## NORTHWEST ENGINEERING COMPANY

*The world's largest exclusive builders of gasoline, oil burning and electric powered shovels, cranes and draglines*

1733 Steger Building  
28 East Jackson Boulevard  
Chicago, Illinois, U. S. A.

### Branch Offices:

Atlanta, Ga.: 351 Whitehall St.  
Memphis, Tenn.: Second at Butler  
Dallas, Tex.: 1221 S. Lamar St.  
St. Louis, Mo.: 1325 Macklind Ave.  
New Orleans, La.: 514 Bank Bldg.

MR 1-7Gray

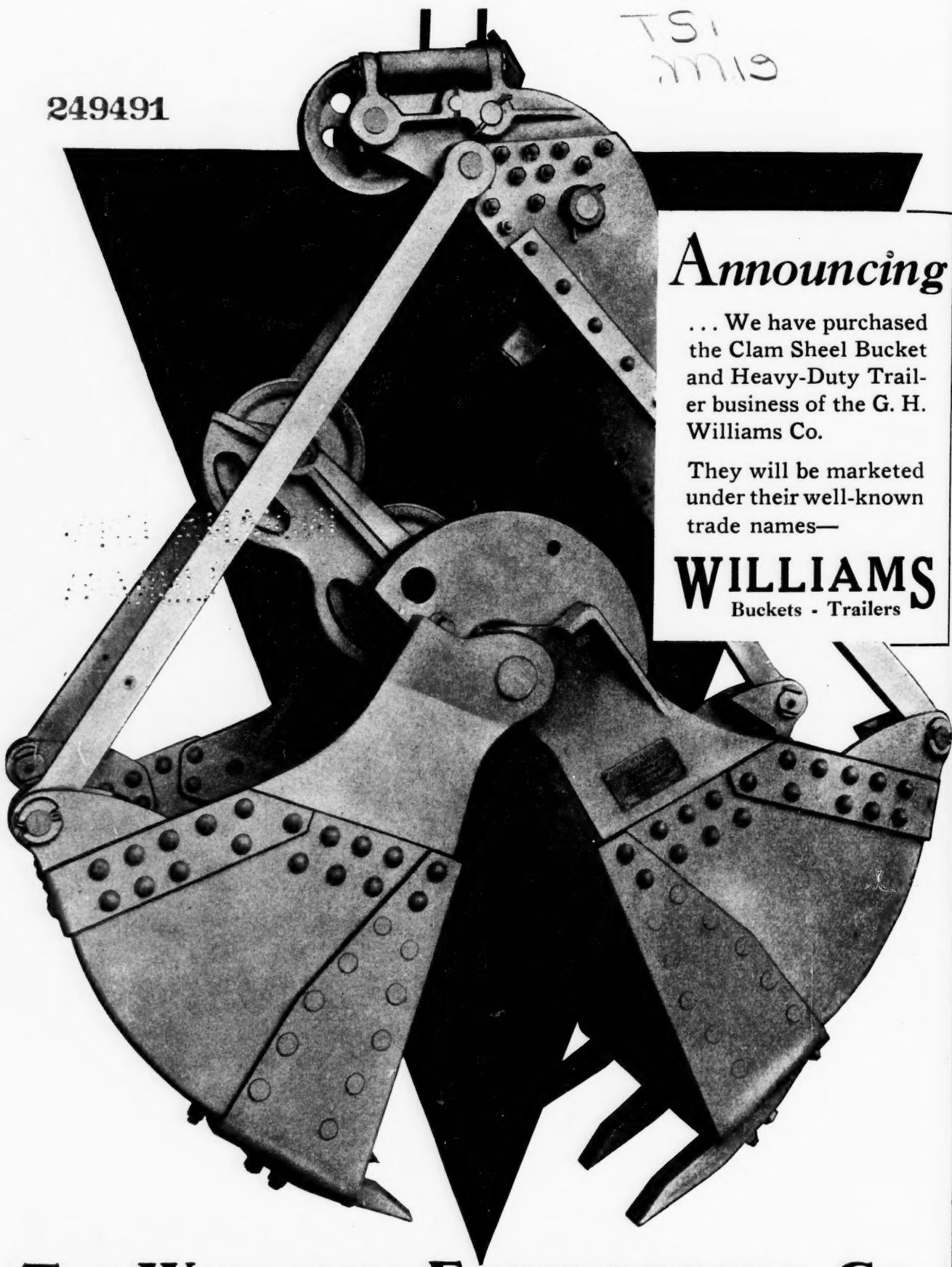
of the purchasers of the first one hundred NORTHWESTS have signified their satisfaction by buying a second, third, fourth . . . even a twelfth machine

WAS there ever a greater assurance of the kind of service you want than this?

Look into the money-making features responsible for this great endorsement!

**NORTHWEST**

249491

TSI  
mis

## *Announcing*

... We have purchased  
the Clam Shell Bucket  
and Heavy-Duty Trail-  
er business of the G. H.  
Williams Co.

They will be marketed  
under their well-known  
trade names—

**WILLIAMS**  
Buckets - Trailers

**THE WELLMAN ENGINEERING CO.**  
ENGINEERS      CONSTRUCTORS      MANUFACTURERS  
**CLEVELAND, OHIO**

New York City: 30 Church St. . Chicago: Room 401 at 549 West Washington Blvd. . Birmingham: 1101 Webb Crawford  
Bldg. . Canadian Wellman-Seaver-Morgan Co., Ltd., 307 Reford Bldg., Toronto; 821 Castle Bldg., Montreal  
Mexico City.: Edificio Oliver, 16 De Septiembre No. 5

# THE RESPONSIBILITIES OF LEADERSHIP



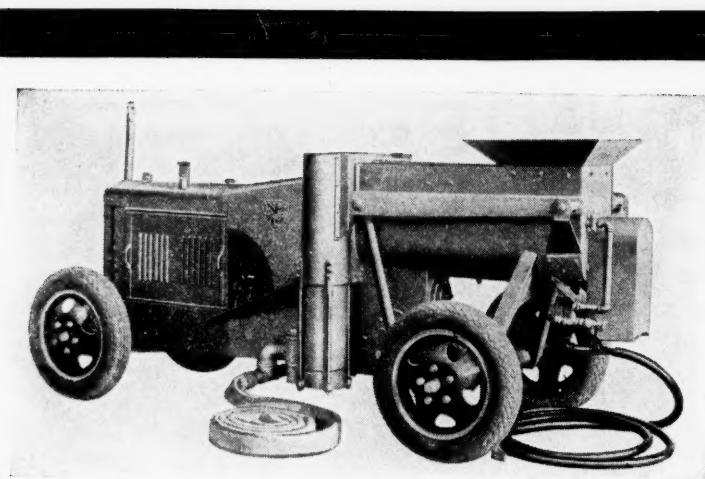
SERVICE is the only road to Leadership. Once arrived, there is no stopping-off place. The road leads on, even though the traveling becomes more difficult. Leadership seeks no rest, no selfish indulgence. It courts no glory, no celebration. Rather, it girds itself for the heavier responsibilities of leadership—to keep the faith of the industry—to meet the bigger expectations of those to be served—to pioneer the

unknown—to overcome new obstacles with new methods—to continue on maintaining a step ahead, in the glaring sun of publicity that beats on Leadership. The Owen Bucket Company recognizes and accepts these responsibilities in renewed pledges of greater service to all Clamshell Bucket users.

THE OWEN BUCKET CO., CLEVELAND, OHIO

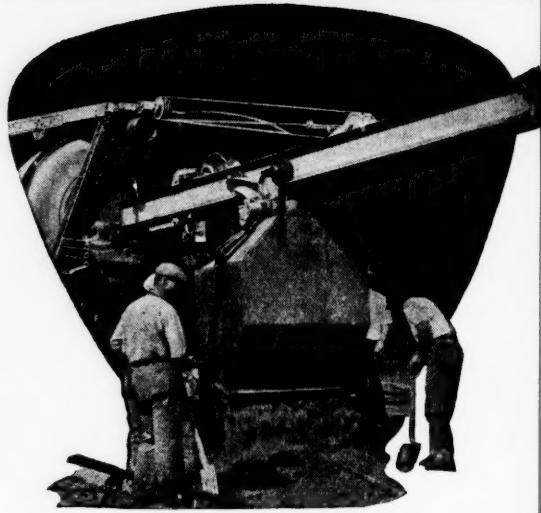


**Owen Buckets**  
A MOUTHFUL AT EVERY BITE



## N. E. C. Mud-Jack

Another new N. E. C. development. Corrects settling of subgrade under rigid type paving. Restores pavement to original grade. The N. E. C. mud-jack mixes earth, water and cement and forces it through holes cut in pavement, raising slabs 1 inch to 18 inches. No interference with traffic. Also used in super-elevating curves. Ask for special mud-jack folder.



## KOEHRING Autocycle Paver

In single operations and "tandem", the Koehring Autocycle has demonstrated its high yardage, low cost production. Enclosed roller and ball bearings and Koehring Heavy Duty construction make the Koehring Autocycle Paver the low maintenance, long distance, extra-profit paver. Know the Koehring.



## KOEHRING Extra-Yardage Shovels

Because of two speeds, greater earning capacity. For the easier working conditions 25% faster speed, for tougher work 25% more power, merely by shifting a lever.

Because of enclosed gears and anti-friction bearings throughout, less time greasing, more work with less maintenance and operating losses.

As shovel, crane, dragline, or pull shovel, the Koehring is a notable performer, an outstanding value!

# National Equipment

J. L. Hart Machinery Co., So. Florida & Euclid Aves., Tampa, Fla.; Graham B. Bright, 901 Electric Bldg., Richmond, Va.; D. C. Elphinstone, Inc., 120 S. Calvert St., Baltimore, Md.; I. E. Schilling Co., 125 N. E. Sixth St., Miami, Fla.; W. C. Caye & Co., Division of

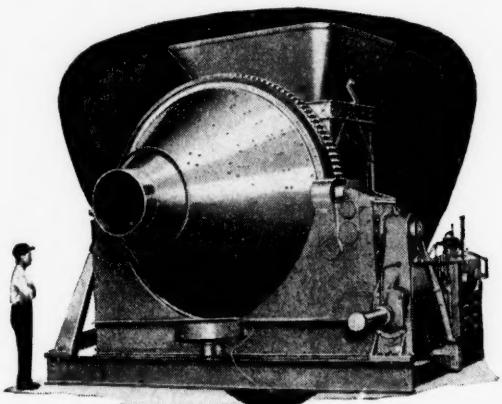


## SMITH Truck Mixer

Operates either as mixer giving thorough, uniform mix, or as agitator in hauls from central mixing plants.

A thoroughly designed, heavy duty outfit, dependable for long trouble-free service and low maintenance.

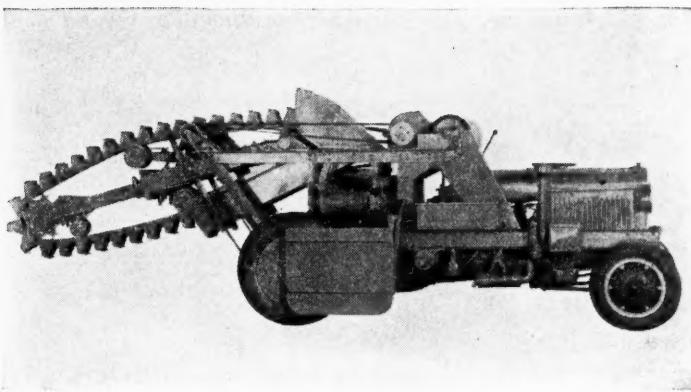
1-1½ yard and 2-3 yard sizes. Write for special truck mixer folder.



## SMITH Tilters

The original big tilters that have built the greatest projects in the world. Thirty-one years of specialized engineering!

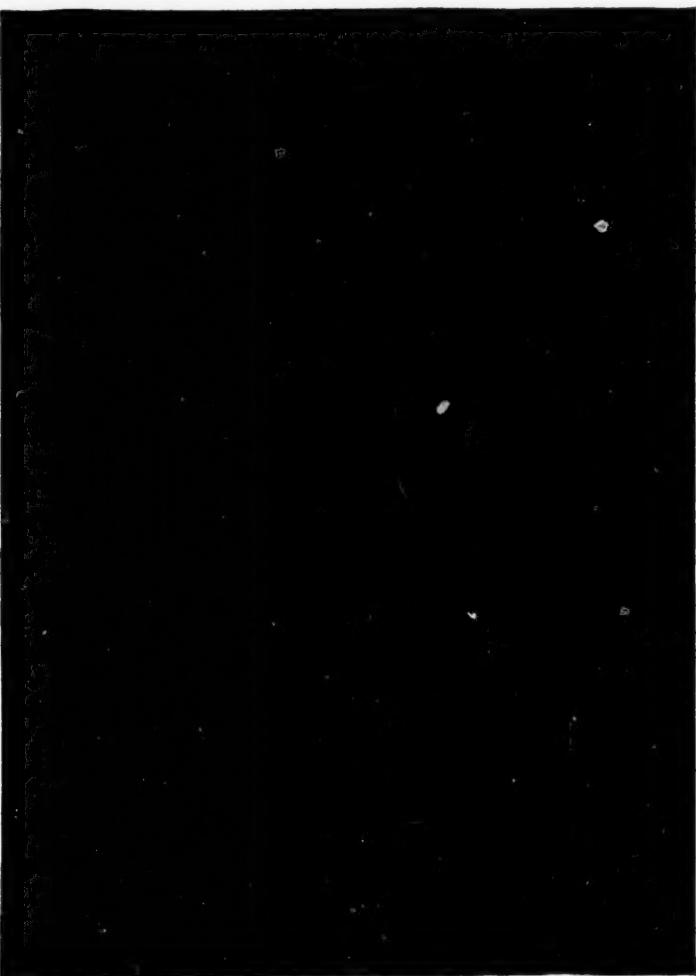
Handles wet or dry mix equally fast. It comes out clean and fast. Hydraulic or pneumatic tilting control . . . actual FingerTip ease of operation. Anti-friction bearings throughout; enclosed gears in oil. Multiple V-belt drive.



## PARSONS Model 14 Ditcher

Pneumatic tires! Travels at truck speed under its own power from job to job.

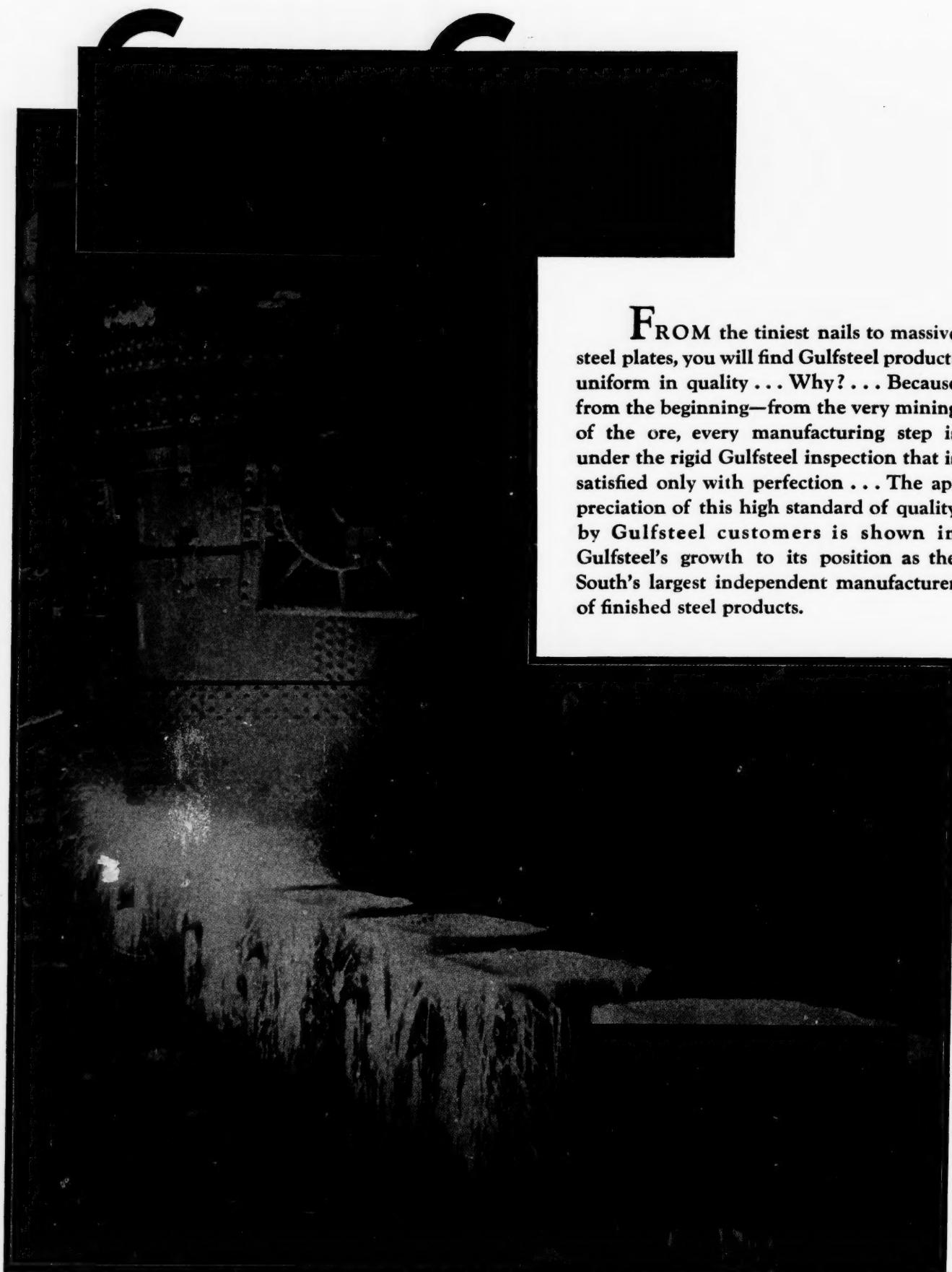
Makes machine ditching practical for widely scattered jobs . . . small pipe lines, gas and water mains, conduits, etc. Twenty digging speeds. Four road speeds. Digs trench 6", 9", and 12" wide, 4' 6" deep. Write for special circular.



# Corporation — N. 30th St. & W. Concordia Ave. Milwaukee —



Wilson-Weesner-Wilkinson Co., 160 Walker St., Atlanta, Ga.; The Young & Vann Supply Co., 1725 First Avenue, Birmingham, Ala.; A 6502-II-C  
Wilson-Weesner-Wilkinson Co., 108 Fatherland St., Nashville, Tenn.; Carolina Contractors Equipment & Supply Co., P. O. Box 576,  
Columbia, S. C.



FROM the tiniest nails to massive steel plates, you will find Gulfsteel products uniform in quality . . . Why? . . . Because from the beginning—from the very mining of the ore, every manufacturing step is under the rigid Gulfsteel inspection that is satisfied only with perfection . . . The appreciation of this high standard of quality by Gulfsteel customers is shown in Gulfsteel's growth to its position as the South's largest independent manufacturer of finished steel products.

# GULFSTEEL

*Cletrac invites you to*



**VISIT CLEVELAND**  
*during ROAD SHOW WEEK*

**OPEN HOUSE**  
*at the CLETRAC PLANT*

WHEN you go to the road show at Detroit this month, plan a day's stop-over in Cleveland. At the Cletrac plant, OPEN HOUSE has been planned for all of Cletrac's many friends of the A. R. B. A. who can arrange to come — and we promise a day chock full of interest and hospitality. Please consider this your invitation to inspect one of the world's most modern tractor plants and be its guest for a day.

WHEN YOU ARE IN  
DETROIT, SEE OR PHONE  
CLETRAC'S REPRESENTATIVE  
AT THE  
BOOK-CADILLAC HOTEL,  
FOR ARRANGEMENTS  
FOR YOUR TRIP TO  
CLEVELAND

— • —  
It's a short comfortable ride from the Road Show to Cleveland. You can spend the evening in Detroit and be in Cleveland next morning at the great modern Cletrac plant.

**A TRIP YOU'LL ENJOY AND REMEMBER**

Nothing will be overlooked to make your visit interesting, pleasurable and profitable. We will welcome the opportunity to have you know us better — to have you see the unusual facilities and resources that are back of the service we offer to you and your industry.

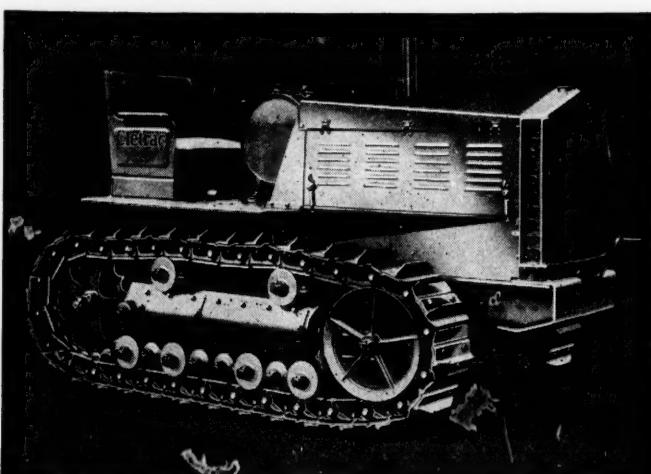
Cletrac's 1932 series of power units brings you the outstanding tractor line-up of the year. In it are five tractor sizes (15 h. p. to 80 h. p.) that cover the entire range of industrial power requirements. And all five models have those modern features of continuous oiling, complete dust-proofing and patented "finger-touch" control that have made Cletracs famous.

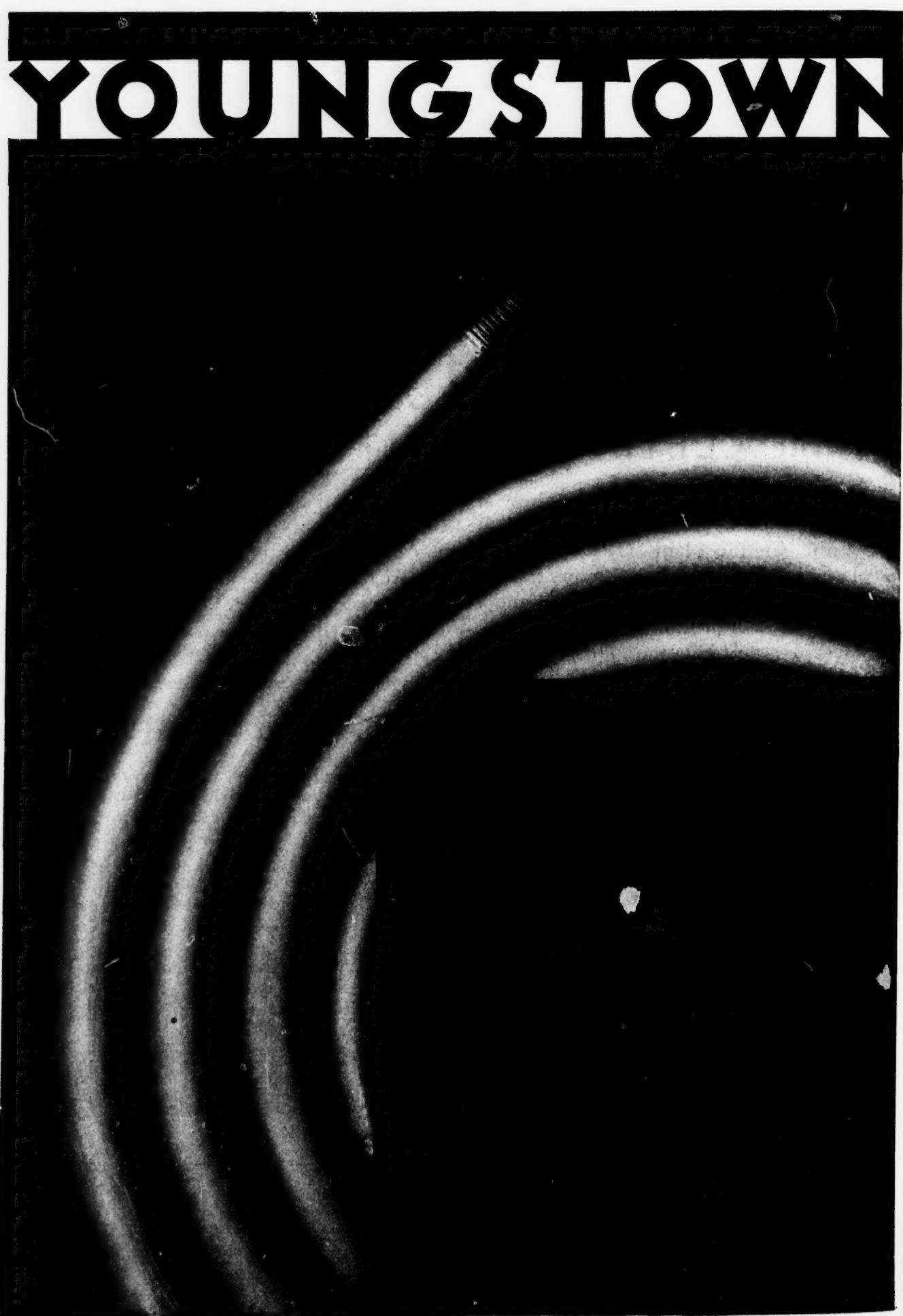
Make a note in your date-book now, to visit us in Cleveland. We are sure you will find your visit well worth-while.

**CLETRAC**  
CRAWLER TRACTORS

THE CLEVELAND TRACTOR COMPANY  
19333 Euclid Avenue      CLEVELAND, OHIO

**don't miss it — be sure to COME!**





January 7, 1932

11



*Views of the new Mt. Vernon Memorial Boulevard connecting the nation's Capital with the home of Washington. Contractors: Roberts Paving Company, Salisbury, Md., and McDougald Construction Company, Atlanta, Ga. Carey Elastite Expansion Joint used throughout—supplied by Asbestos Covering & Roofing Co., Washington, D.C.*

**Carey Elastite**  
REGD. U.S. PATENT OFFICE  
TRADE MARK REGD. U.S. PATENT OFFICE  
**Expansion Joint**



## “Makes Good Paving Better”

For over 20 years Carey Elastite Expansion Joint has been protecting concrete highways against expansion and contraction stresses. Engineers specify it to insure definite results—road builders know that it is stocked in all principal centers, insuring prompt delivery.

1932 price list and trade discounts will be sent on request.

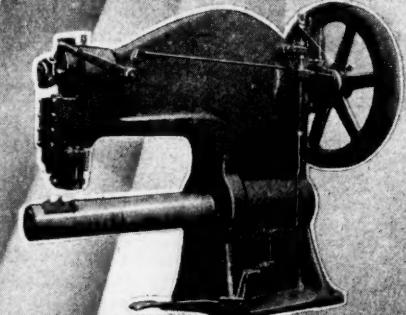
**THE PHILIP CAREY COMPANY • Lockland, Cincinnati, Ohio**  
BRANCHES IN PRINCIPAL CITIES

|   |  |   |
|---|--|---|
| BUILT-UP ROOFS<br>ASPHALT PRODUCTS<br>ELASTITE EXPANSION JOINT<br>WATERPROOFINGS<br>ROOF PAINTS | <b>Carey</b><br>PRODUCTS<br><small>EST. 1873</small> | HEAT INSULATIONS<br>ASBESTOS MATERIALS<br>CAREYSTONE CORRUGATED SIDING<br>ASFALTSLATE SHINGLES<br>BUILDING PAPERS |
|---|--|---|

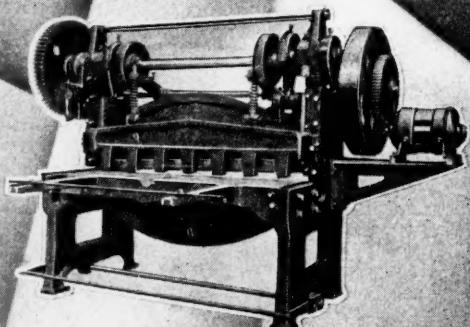
# Corrugated Culvert Manufacturers Equipment

for Quality Work at Low Cost!

CORRUGATED CULVERT ROLL



COMBINED PUNCH and STAKE RIVETER.



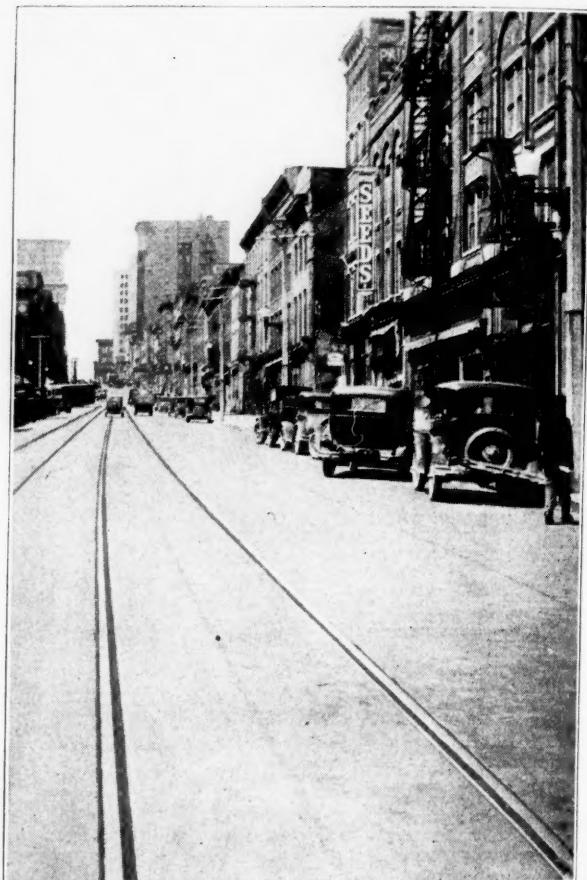
SHEAR WITH CORRUGATED BLADES

**BERTSCH & CO.**  
Cambridge City Indiana

BUSY  
STREETS  
NEED  
VITRIFIED

BRICK PAVEMENTS

Longest life  
Lowest maintenance  
For light or heavy traffic  
Preferred by traction men  
Accessibility to service lines  
Less interruptions to business



Looking down a 40-block stretch of Brick pavement on Richmond, Virginia's East Main Street, of which city Colonel R. Keith Compton is Director of Public Works; Mr. A. Mason Harris is Chief of the Bureau of Streets.

WHERE heavy traffic flows, there you need brick. It keeps the lanes open year after year for less cost than any other pavement known.

And for busy roads, brick is the logical choice, for both new construction and resurfacing old slabs. Brick resists weather, arch enemy of most pavements. The material is so tough and dense that nothing on wheels can damage it.

For additional information, Address NATIONAL  
PAVING BRICK MANUFACTURERS ASSOCIATION, 1245  
National Press Building, Washington, D. C.

January 7, 1932

13

# OPENED TO TRAFFIC

— in less than half  
of specified time  
of 48 hours



• Use standard ALPHA CEMENT from your building material dealer for all of your work. Used properly, it will give you the desired results.

Helpful literature on cement construction sent upon request.

When planning the permanent improvement of the main entranceway from the highway to the plant of the Ingersoll-Rand Company, Phillipsburg, N. J., it was imperative to use the new drive as early as possible. In addition to numerous cars, heavily loaded trucks constantly traveled in and out of the plant.

The entranceway had to be opened in not more than 48 hours after the last section of concrete had been poured.

High early strength concrete, made with standard ALPHA PORTLAND CEMENT, was used, with the result that the finished driveway was opened to all traffic 20 hours after completion of the last section of concrete.

**ALPHA** PORTLAND CEMENT COMPANY

BATTLE CREEK, MICH.  
IRONTON, OHIO

BIRMINGHAM, ALA.  
NEW YORK

BOSTON  
PHILADELPHIA

CHICAGO  
PITTSBURGH

EASTON, PA.  
ST. LOUIS

# SEAVERNS BATCHING BINS



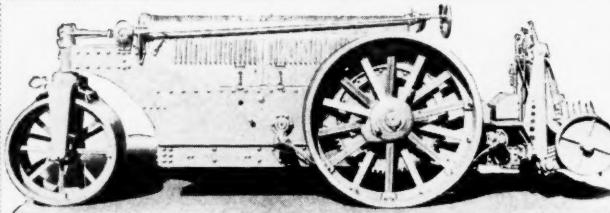
*are the perfect product of experience in the bin line.*

We have been building bins since 1914 and offer the contractor an efficient and highly developed piece of equipment with a factor of safety and performance when a rush demands.

"Send for dope."

*Get in touch with us for good bins at the right price*

**JAMES B. SEAVERNS COMPANY, Inc., Batavia, Ill.**  
Lawrence V. Fraley & Son, Buder Bldg., St. Louis, Mo.



## Rugged-Reliable-Modern

That the Buffalo-Springfield Roller really has extra years of service built into it is a fact that becomes readily apparent upon close inspection. Nothing that specialized manufacture considers desirable, or that the most exacting buyer demands, is lacking.

Aside from the incorporation of the latest worthwhile features, these rollers are fabricated with strength, ruggedness, and in consequence, with long life ever in mind as a major consideration.

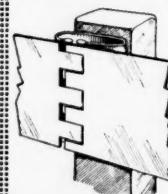
Built in every practical weight and size, both steam and motor driven, three wheel and tandem. Scarifier and other attachments optional.

*Write for illustrated booklet*

The Buffalo-Springfield Roller Co.  
SPRINGFIELD, OHIO

# Buffalo-Springfield ROLLERS

## Absorbs the Severest Shocks



The Resiliflex Guard Rail consists of broad galvanized plates, ends interlocking and supported under heavy tension by galvanized steel springs attached to posts. The interlocking joint assists in absorbing the severest shocks and insures a continuous structure for guarding traffic.

*Literature describing in detail the many advantages of Resiliflex Road Guards is yours for the asking.*

National Traffic Guard Co.  
215 Moreland Ave., N. E. ATLANTA, GA.

## ASPHALT PLANTS

**THE SIMPLICITY SYSTEM COMPANY**  
CHATTANOOGA, TENNESSEE

**BUCYRUS ERIE**

**BUCYRUS MONIGHAN**

**WALKING DRAGLINE EXCAVATORS**

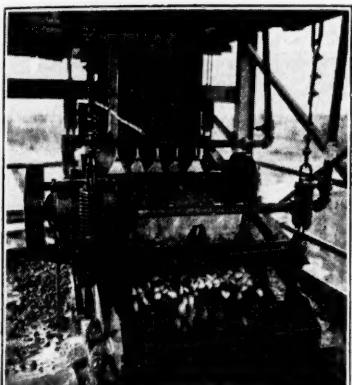
**SHOVELS CRANES DRAGLINES DREDGES**

## Reliability!

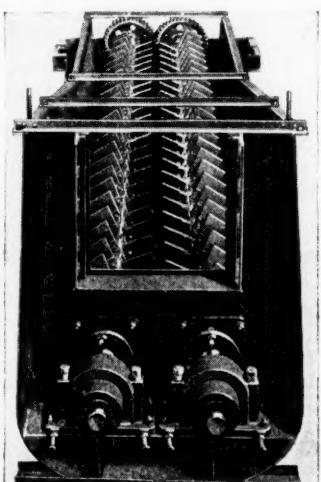
Bucyrus-Erie are cutting costs in every part of the world. All sizes, types and powers of excavators. Railway cranes and "Load-master."

Bucyrus-Erie Co.  
South Milwaukee, Wisconsin

# Complete Washing Equipment for Producing Clean Aggregate



*Vibrating Screen with Sprays  
for Washing.*



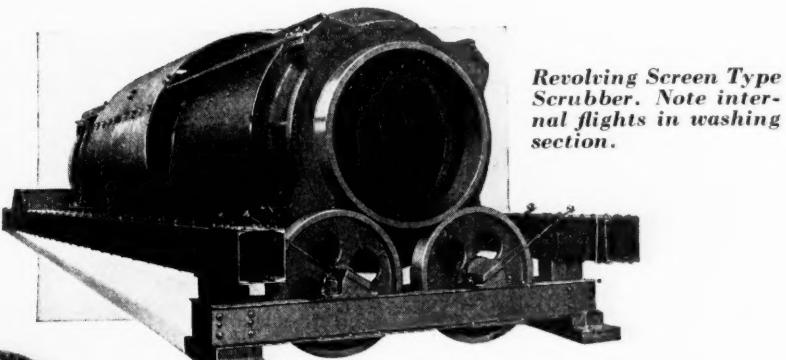
*Log Washer for Stone  
or Gravel.*

**T**HE demand for clean washed aggregates is increasing rapidly and concrete specifications are becoming so stringent that this phase of the producing problem has become vitally important.

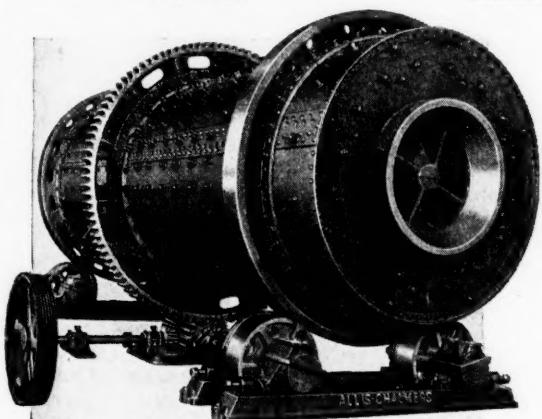
Because some materials are easy to wash whereas others are difficult, depending upon the nature of the deposit, the selection of proper combinations of machinery to meet these varying conditions necessitates a complete line of washing equipment.

Allis-Chalmers has supplied machinery for many washing plants, having a wide range of machinery to meet every condition and engineers with experience in applying this machinery.

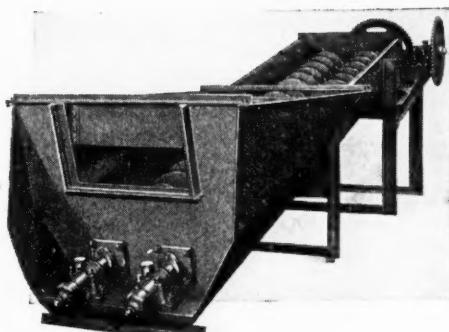
*A new booklet has been prepared on this important subject. Write for Bulletin 1471.*



*Revolving Screen Type  
Scrubber. Note inter-  
nal flights in washing  
section.*



*Left - Stone  
Scrubber.*



*Right -  
Double Screw  
Sand Washer.*

# ALLIS-CHALMERS

Allis-Chalmers Manufacturing Company, Milwaukee

*We produce in quantities to meet your requirements*

## SAND and WASHED GRAVEL

QUICK shipments by rail from Baltimore and North East, Md. or in scow and barge lots. Truck or rail shipments from Baltimore, Md.

**The Arundel Corporation**  
MAIN OFFICE: ARUNDEL BUILDING  
BALTIMORE, MARYLAND  
Branches: New York, Norfolk and Miami

**Crushed Stone  
Mascot Chatts Roofing Gravel  
Asphaltic Roadway Gravel  
Asphalt Filler Dust**



AMERICAN LIMESTONE COMPANY  
KNOXVILLE TENNESSEE

## SAND—GRAVEL—BRICK FILTER GRAVEL

Washed Sand and Gravel for Concrete Roads and Buildings  
Filter Gravel, all sizes—Building Bricks  
FRIEND & CO., INC. River St., Petersburg, Va.

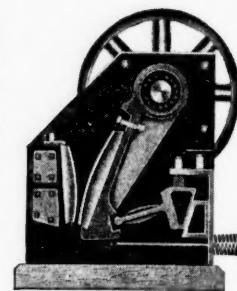
**Woodstock Slag**  
for economy and permanence in Road Building and General Construction  
WOODSTOCK SLAG CORP.  
Southern Railway Bldg., Birmingham, Ala.

## GRUENDLER Roller Bearing All Steel Fine Reduction CRUSHER

for

QUARRIES  
ROAD MAINTENANCE  
CONSTRUCTION WORK  
Stationary and Portable

Also manufacturers of complete Fertilizer Grinding and Mixing Machinery  
—Gravel Screening and Washing Plants—Elevating and Conveying Machinery.



**GRUENDLER**  
Crusher and Pulverizer Co.  
2915 N. Market St., ST. LOUIS, MO.  
Dept. M.

## Prompt Shipment of Sand and Gravel from this Plant

Capacity two tons a minute day and night. Plant served by five railroads. Located within switching distance of Augusta, Ga. Send us your specifications.

**Georgia Sand & Gravel Co.**  
E. W. Hancock, Pres.

Box 273      **Augusta, Ga.**  
Phone 1932

### LARGEST PLANT

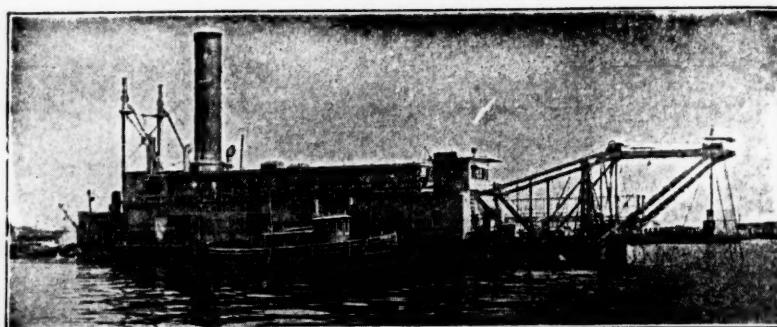
Filling,  
Land Reclamation,  
Canals  
and Port Work

River and Harbor Improvements,  
Deep Waterways  
and Ship Channels.

*Correspondence Invited  
from Southern Officials  
and Corporate and Private  
Interests Everywhere.*

NEW YORK  
21 Park Row

### DREDGING



### LONGEST EXPERIENCE

We are especially equipped to execute all kinds of dredging, reclamation and port works in Southern waters.

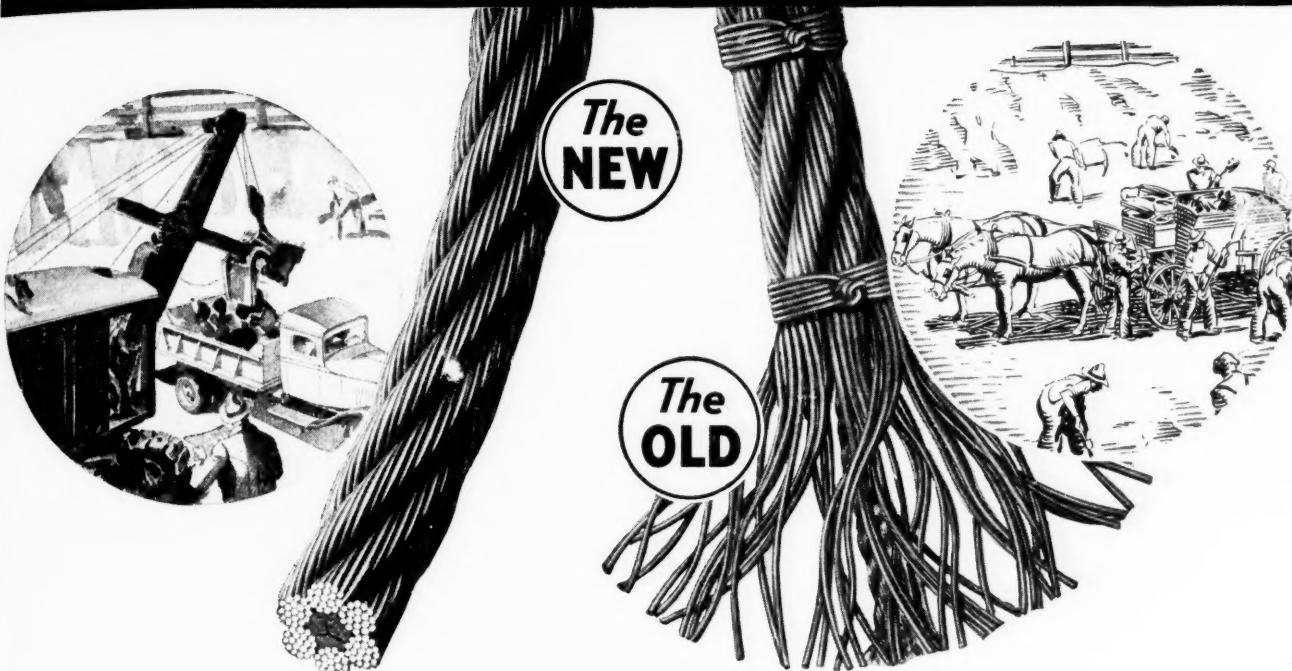
CONTRACTORS  
TO THE  
FEDERAL GOVERNMENT

HOUSTON  
Scanlan Bldg.

**Atlantic, Gulf and Pacific Company**

January 7, 1932

# As the Steam Shovel excels the Pick and Shovel Preformed Wire Rope excels old-fashioned ordinary wire rope



## PREFORMING . . a basic principle recognized the World over

**I**N ENGLAND, Germany, France and Canada as well as here in the United States, leading users of wire rope demand it be made on the preformed principle. This demand is based on service records that prove 30% to 300% increased service over ordinary wire rope — depending on the type of equipment and nature of service.

- TRU-LAY is the fore-runner of all Preformed Wire Rope. Tru-Lay gradually but surely won first rank in the sales of the American Cable Company—until now most of our customers specify Tru-Lay Preformed Wire Rope as a matter of course.

- The chief reason for 30% to 300% longer service with Tru-Lay is the elimination of internal stress. Wires and strands are set to a helical shape so they lie naturally in position . . . whereas in ordinary wire rope there is a constant effort on the part of the wires and strands to straighten out, resulting in early fatigue and premature breakage of wires. Thus Tru-Lay excels ordinary wire rope as the modern power shovel excels the pick and shovel.

- Look at your annual wire rope bill. Then think what 30% to 300% increased service would mean to your overhead in these days when every dollar counts.

*Send for this complete story*

- Write for your copy of "Why Preformed Wire Rope" on your business letter-head. This story in pictures is non-technical, can be read and understood in a few minutes. Everyone in any way connected with the use or purchase of wire rope should read it.
- If you prefer to have a representative call, a letter or wire will receive immediate attention. Address:

**AMERICAN CABLE COMPANY, Inc.**

New York Central Building, 230 Park Ave., NEW YORK CITY

District Offices: Chicago, Denver, Detroit, Philadelphia, Pittsburgh, Tulsa, San Francisco

The following manufacturers have been licensed to manufacture Preformed Wire Rope under the American Cable Company's Patents Nos. 1,513,583-1,518,253-1,643,150. (Other patents pending.)

(In the United States)

American Steel & Wire Co.  
Broderick & Bascomb Rope Co.  
E. H. Edwards Company  
Hazard Wire Rope Co.  
Pacific Wire Rope Co.

(In Canada)

Dominion Wire Rope Co., Ltd.  
Anglo-Canadian Wire Rope Co., Ltd.  
Canada Wire & Cable Co., Ltd.  
B. Greening Wire Co., Ltd.

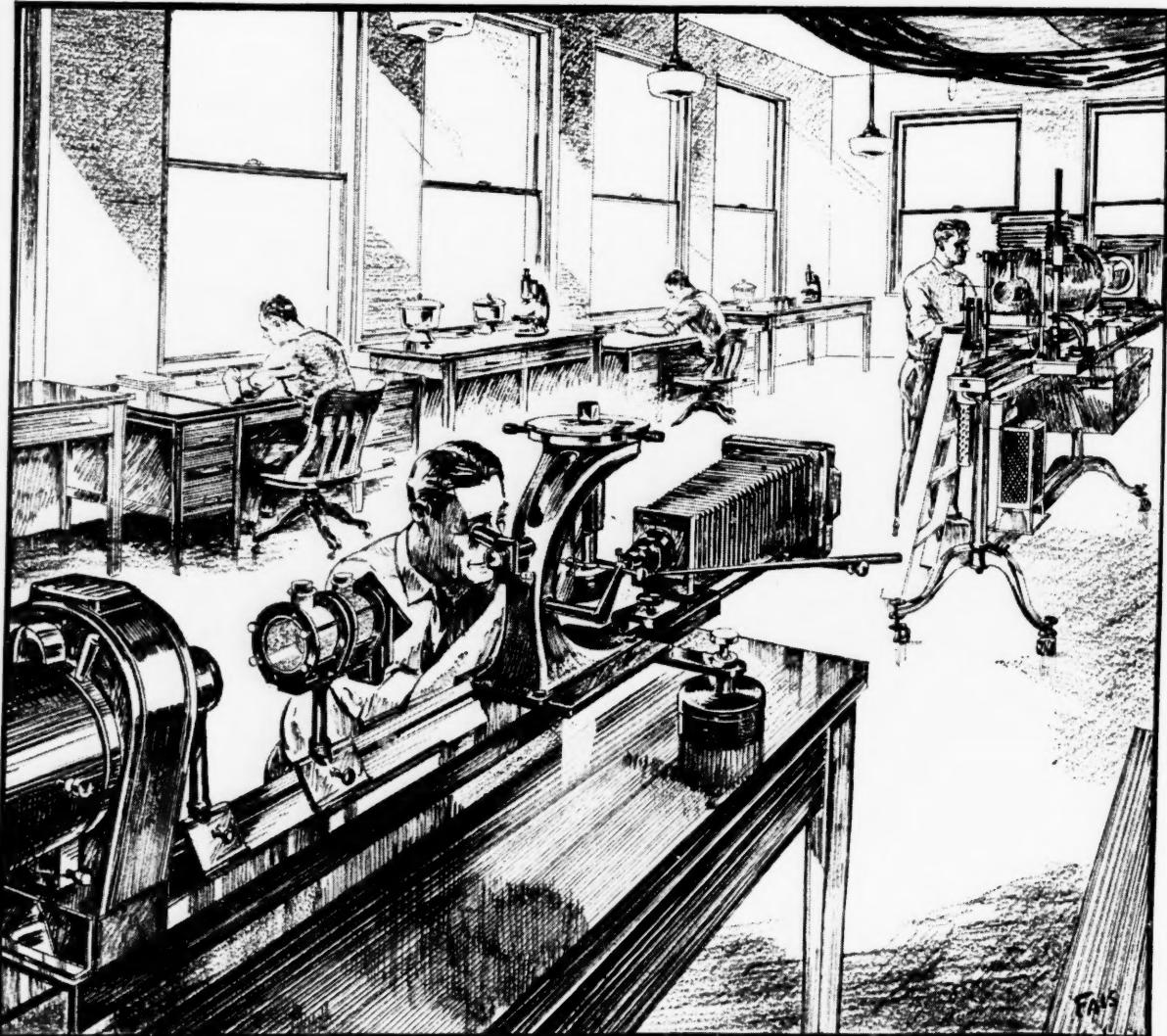


An Associate Company of  
the American Chain Company, Inc.

## TRU-LAY PREFORMED WIRE ROPE

30% to 300% Increased Service

[Depending upon the character of  
the service and type of equipment]



No. 15 of a series of advertisements on "How Superlative Quality is Built into Roebling Wire Rope".  
Above is shown a view of the Metallurgy Sect. on of the Roebling Research Laboratory.

## The New Roebling Research Laboratory

The new Roebling Laboratory is one of the country's most modern and completely equipped industrial research units.

An unending stream of problems flows to this busy beehive of research and its facilities are equal to all. There are laboratories devoted to general physical testing, to metallurgy, to metallography, and to research on welding wire and electrical wires and cables. Then, too, there is an experimental wire mill developed by Roebling engineers. Equipment is complete even to air-conditioned rooms, where the effects of temperature and humidity on

various materials and products may be studied.

Here, in this research laboratory, goes on the ceaseless work of improving Roebling Wire Rope and other products. Materials are analyzed. Service conditions are exhaustively studied and better ways of meeting them are evolved. New manufacturing processes are developed and tested.

There is no standing still at Roebling.

**JOHN A. ROEBLING'S SONS CO., TRENTON, N.J.**

*Branches in Principal Cities*

*Export Dept.: New York*

WIRE • WELDING WIRE • FLAT WIRE • COPPER & INSULATED WIRES AND CABLES • WIRE CLOTH AND WIRE NETTING

# ROEBLING



# WIRE ROPE

# One of the World's Largest Bubble Towers

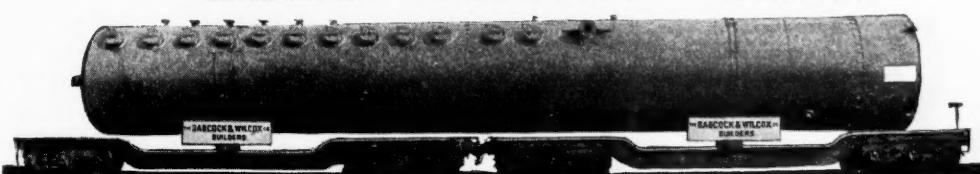


• THIS bubble tower and gas oil accumulator, built by The Babcock & Wilcox Company for the Lummus Company, will be installed at the Bayonne, New Jersey Refinery of the Tidewater Oil Company.

Constructed of 1-1/4" steel plate to withstand 150 pounds per square inch pressure at 700° F. maximum temperature, this tower is 12' 0" O. D., over 93' long, and weighs more than 325,000 pounds.

All seams are welded by The Babcock & Wilcox Fusion Welding Technique which includes automatic welding, X-Ray inspection, and stress relieving in one of the largest annealing furnaces ever constructed. That this Company is well able to fabricate any type of pressure vessel in sizes limited only by railroad shipping clearances is conclusively proved by the delivery of this outstanding order.

THE  
**BABCOCK & WILCOX**  
COMPANY  
85 LIBERTY ST. NEW YORK, N.Y.





# 100 Years Old and still going strong

You are looking at an unretouched photograph of a cast iron water main that is beginning *another century of service* to the taxpayers of St. Louis. This grand old pipe, originally laid in 1831, was removed 20 years later to its present location where it is still in service. Officials of the St. Louis Water Department recently uncovered a section of this old cast iron main and found it in excellent condition.

Exact computation of the savings to taxpayers effected by long-lived cast iron pipe is impossible, but they obviously amount to many millions. Shorter-lived substitutes, sooner or later, cost the public more in taxes, assessments or rates.

The reason for the long life of cast iron pipe is its effective resistance to rust. Cast iron is the one ferrous metal for water and gas mains, and for sewer construction, that will not disintegrate from rust. This characteristic makes cast iron pipe the most practicable for underground mains since rust will not destroy it. Every taxpayer should take an active interest in the kind of pipe being laid, or to be laid, in his community. For further information write to The Cast Iron Pipe Research Association, Thomas F. Wolfe, Research Engineer, 122 South Michigan Avenue, Chicago, Ill.



Cast iron pipe bearing the above "Q-check" trademark is obtainable from the following leading pipe founders: Alabama Pipe Company, Anniston, Ala.; American Cast Iron Pipe Company, Birmingham, Ala.; James B. Clow & Sons, 219 N. Talman Avenue, Chicago, Ill.; Donaldson Iron Company, Emaus, Pa.; Glamorgan Pipe and Foundry Company, Lynchburg, Va.; Lynchburg Foundry Company, Lynchburg, Va.; National Cast Iron Pipe Company, Birmingham, Ala.; United States Pipe and Foundry Company, Burlington, N. J.; Warren Foundry and Pipe Corp., 11 B'dway, New York.



Officials of Water Division, City of St. Louis, at inspection of 100-year-old cast iron pipe still in service. (Left to right) A. H. Schaum, Sec'y to Water Commissioner; Hon. John C. Pritchard, Director of Public Utilities; T. J. Skinker, Division Engineer; L. O. Alt, Inspector.

# CAST IRON PIPE

# ARE You THE MAN—



who will  
“HEAR  
ABOUT  
IT  
LATER”?

**W**HEN a new building is piped, or when repairs are made in piping systems, someone must take the responsibility. Someone must say, "I chose that material".

Are YOU that man? And will you ignore the one pipe material that has proved its ability to eliminate pipe failure throughout the entire life of the building?

That pipe is Reading Puddled Iron Pipe—the *only* kind of pipe today that in tens of thousands of installations, over generations of use, for thousands of purposes, has demonstrated that it can stand up!

No so-called modern "iron" pipe can do more than claim similar virtues. No pipe material used for merely tens of years has shown its immunity to all the attacks that pipe must endure.

Make your installations *safe* today by specifying the pipe that gives proved protection from trouble—Reading Puddled Iron Pipe, the pipe that has withstood the tests of time.

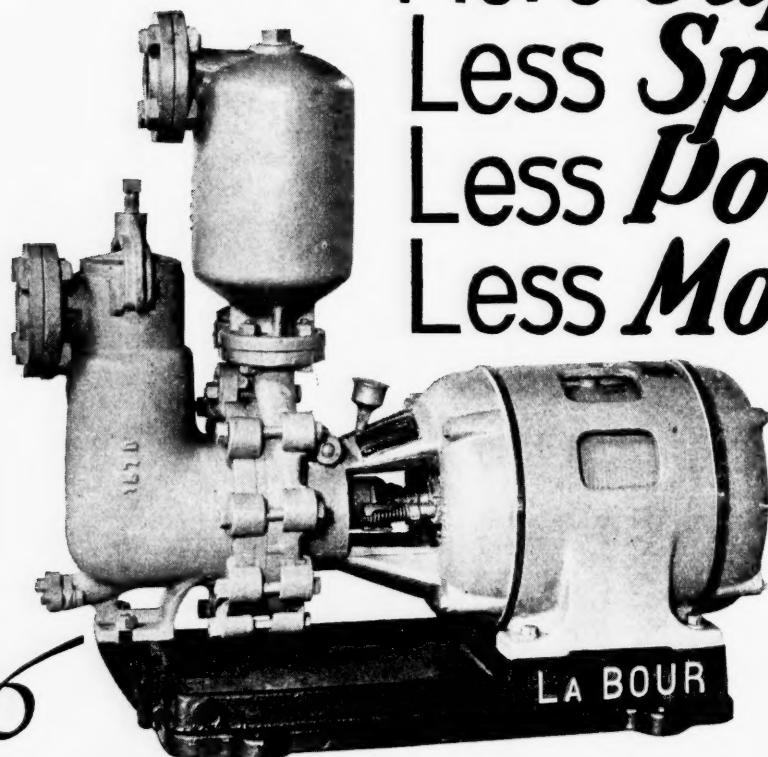
Write us today—let Reading Engineers give you the *facts* about the kind of Reading Puddled Iron Pipe that will best meet your needs.

READING IRON COMPANY, Philadelphia, Pa.



*Science and Invention Have Never Found a Satisfactory Substitute for Genuine Puddled Iron*

More Capacity  
Less Space  
Less Power  
Less Money



LaLabour Pumps, Types DTM and DSM, are sold complete with the electric motor. In ordering it is necessary to specify whether direct or alternating current, voltage and number of cycles.

For this new **LaLabour Pump**

Four noteworthy accomplishments mark the introduction of the newest models of LaLabour Pumps, catalogued as type DTM (top separator) and DSM (side separator).

New compactness of design has reduced the floor space required to an unusually small area, particularly when the volume of water which the pump will handle is considered. Intervening bearings between motor and pump have been eliminated since they are unnecessary in this type of construction.

Greater efficiency, reducing power consumption and increasing capacity, has resulted from the constant effort toward improvement which has always marked the LaLabour organization.

Also important is the fact that the new design, plus factory economies, makes

it possible to sell these pumps at prices distinctly in trend with the times.

These pumps are expressly intended for hydraulic and other non-corrosive work. All of the operating characteristics which have made LaLabour Pumps famous in the process and other industries are retained.

Like previous models of LaLabour Pumps, the new types will handle air and prime themselves. This is accomplished with a single impeller. There are no floats, valves or auxiliary apparatus of any kind. The utter simplicity of LaLabour Pumps has been an important factor in establishing their wide reputation for long and uninterrupted service.

Send for a copy of Bulletin 37—just off the press—which gives full details about these new types of LaLabour Pumps.

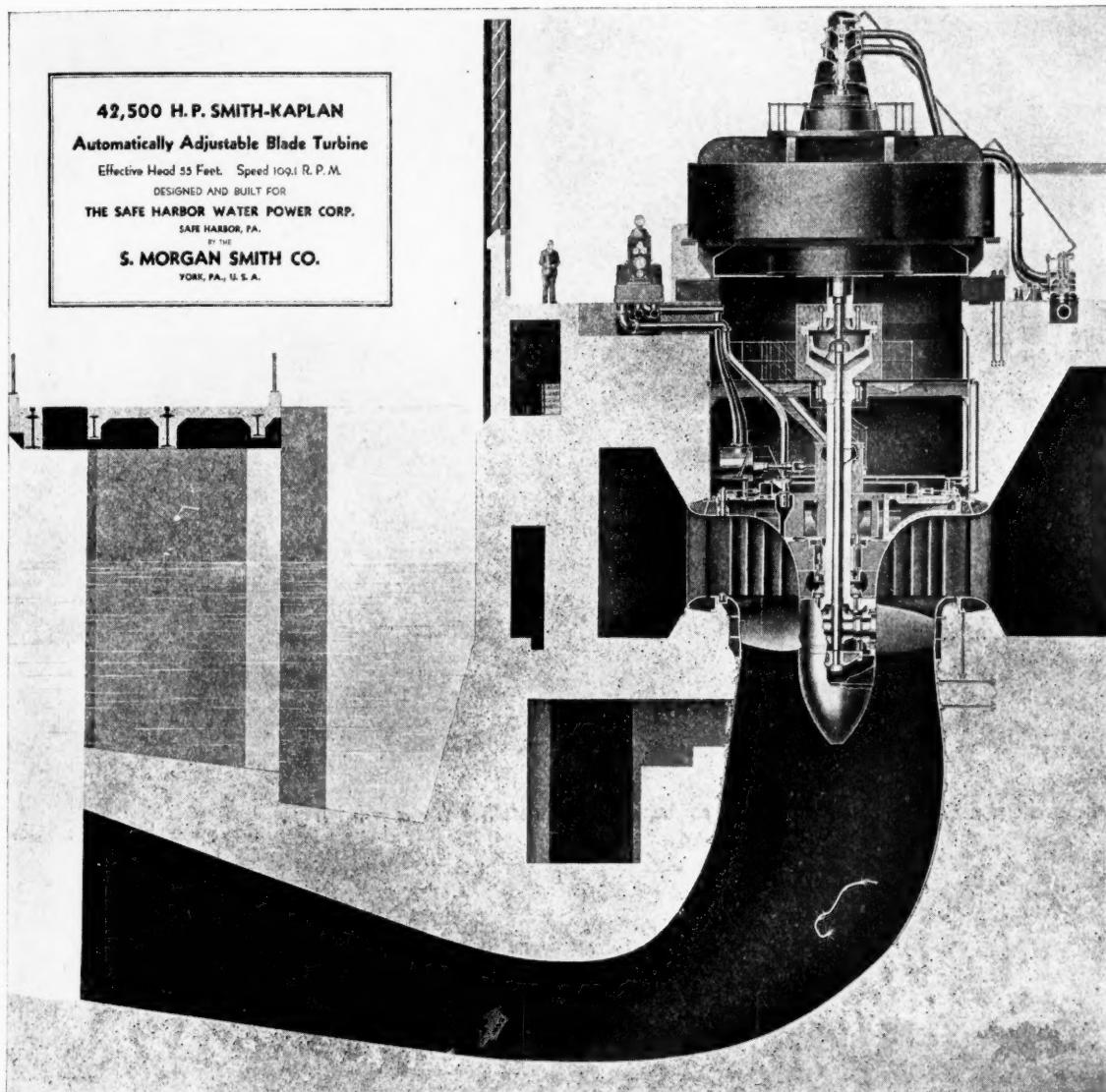
**THE LABOUR COMPANY, INC.**

103 STERLING AVENUE  
ELKHART - INDIANA

# LA BOUR PUMPS

NEVER LAY DOWN ON THE JOB

# Safe Harbor—now "on the line"—



**42,500 H.P. SMITH-KAPLAN**  
**Automatically Adjustable Blade Turbine**  
 Effective Head 55 Feet. Speed 109.1 R.P.M.  
 DESIGNED AND BUILT FOR  
 THE SAFE HARBOR WATER POWER CORP.  
 SAFE HARBOR, PA.  
 BY THE  
 S. MORGAN SMITH CO.  
 YORK, PA., U.S.A.

The above view shows a general cross section through one of the main Smith-Kaplan Turbine units installed at the Safe Harbor Water Power Corporation development on the Susquehanna River, below Columbia, Pa. Each unit consists of a vertical shaft, governor controlled, adjustable blade Kaplan turbine direct-connected to an electrical generator.

The turbines will each develop 42,500 h.p. at 109.1

r.p.m. under an effective head of 55 ft. Exhaustive model tests of the complete setting were made to determine the most efficient form for the concrete spiral casing, and draft tube; and also for the proper setting to eliminate the danger of cavitation.

WRITE FOR BULLETIN 123-A DEALING WITH KAPLAN INSTALLATIONS AND CONTAINING COMPLETE ENGINEERING DATA. SMITH TURBINES now in use or under construction total over 7 million horsepower.

# S. MORGAN SMITH CO.

Department "M"

York, Penna., U. S. A.

Boston—Albany—Chicago—Salt Lake City—Denver—Portland, Ore.—San Francisco  
 (Associated Company)—S. Morgan Smith—Inglis Co., Ltd., Toronto, Canada



# GAS

*Gas-fired installation for metal lithographing.*

## FOR HEAT WHEREVER HEAT IS NEEDED

From the jeweler's tiny torch to the mighty blast furnace. The free book "Gas Heat in Industry" tells the whole story. Send for it.

AMERICAN *Gas* ASSOCIATION  
420 Lexington Avenue, New York





**NOW...**

## *a new teletypewriter service*

TELETYPEWRITER exchanges, similar to telephone exchanges, now make it possible for any subscriber to this service to typewrite by wire instantly to any other subscriber, whether he be around the corner or across the continent. Subscribers can type back and forth by wire for short or long periods, just as they now talk by telephone.

Messages, inquiries, reports—typed in your office—are instantly and accurately reproduced on any other subscriber's teletypewriter. Identical typewritten copies, made by both sending and receiving machines, are available for permanent records.

This new service differs from existing private-

line teletypewriter service in that any subscriber may ask for any other subscriber and be connected immediately. The cost is low.

Teletypewriter Service provides two-way communication.

Speed of connection is as fast as telephone service.

A typewritten record, one or more copies, is produced simultaneously by both sending and receiving machines.

Material transmitted may be recorded on forms if desired.

Teletypewriters are like ordinary typewriters in appearance.

Teletypewriters can be operated by any one who can operate a typewriter.

You can use Teletypewriter Service any time you need it.

A most economical form of record communication.

**FOR FURTHER INFORMATION JUST CALL**



**YOUR BELL TELEPHONE BUSINESS OFFICE**

## DIRECTORY

## ARCHITECTS

ENGINEERS  
TECHNICAL ENGINEERS ACC

CHEMISTS

## **ACCOUNTANTS**

## GEOLOGISTS

Detailed classification of specialized work undertaken by those having cards in this Directory will be found in Classified Index.

|   |  |  |  |
|---|--|--|--|
| <b>J. B. Converse &amp; Co., Inc.</b><br>Engineers<br>Industrial Investigations, reports,<br>plans, estimates, supervision.<br>MOBILE, ALA.   | <b>Whitman, Requardt &amp; Smith</b><br>Engineers<br>Water Supply, Sewerage and Structural<br>Engineering—Reports, Designs,<br>Valuations.<br>Baltimore Trust Bldg. BALTIMORE, MD.<br>ATLANTA, GA. ALBANY, N. Y. | <b>Steel &amp; Lebby</b><br>JOHN A. STEEL, JR.<br>THOR. D. LEBBy<br>Engineers and Contractors<br>The design and erection of concrete and<br>steel structures.<br>Holston Bank Building, KNOXVILLE, TENN.   | <b>Dow &amp; Smith</b><br>A. W. Dow, Ph. B.; F. P. Smith, Ph. B.<br>Mem. Am. Inst. Ch. Engrs.<br>Mem. Am. Soc. Civ. Engrs.<br>Chemical Engineers, Consulting Engineers,<br>Engineers, Asphalts, Bitumens, Cement,<br>Paving Materials<br>131 East 23rd St. NEW YORK  |
| <b>Milburn, Heister &amp; Co.</b><br>Architects<br>WASHINGTON, D. C.  | <b>Chas. T. Main, Inc.</b><br>Industrial Engineers<br>Mills, Warehouses, Complete Develop-<br>ments.<br>Electrical, Steam and Water Power<br>Reports Appraisals<br>201 Devonshire St. BOSTON, MASS.              | <b>The Warner Service Company</b><br>Electrical and Mechanical<br>Contractors<br>Cor. Clinch and Central Ave.<br>KNOXVILLE, TENN.  | <b>Consoer, Older &amp; Quinlan, Inc.</b><br>Mems. A. S. C. E.<br>Consulting Engineers<br>Water Supply—Sewerage—Industrial<br>Engineering<br>317 N. 11th St. ST. LOUIS, MO.<br>205 W. Wacker Drive, CHICAGO, ILL.  |
| <b>Wm. J. J. Chase, A. I. A.</b><br>Architect<br>Public and Commercial Buildings<br>140 Peachtree St. ATLANTA, GA.  | <b>Smallman-MacQueen</b><br>Construction Co., Inc.<br>Engineers and Contractors<br>BIRMINGHAM, ALA.  | <b>Charles W. Alpaugh &amp; Sons</b><br>Hydraulic and Construction Engineers<br>Dams a Specialty: Investigations,<br>Estimates Free<br>MANASSAS, VA.   | <b>Established 1893</b><br><b>Kansas City Bridge Co.</b><br>Builders of Railroad and<br>Highway Bridges<br>River Improvement Work<br>General Office, 215 Pershing Road (Union<br>Station Plaza), KANSAS CITY, MO.  |
| <b>G. Lloyd Preacher &amp; Co., Inc.</b><br>Architects and Engineers<br>501 Mortgage Guarantee Bldg.<br>ATLANTA, GA.  | <b>The John W. Cowper Co., Inc.</b><br>General Contractors<br>843-851 National Press Bldg.,<br>WASHINGTON, D. C.   | <b>Virginia Engineering Co., Inc.</b><br>General Contractors<br>Government — Municipal — Industrial<br>Buildings — Power Plants — Heating<br>Plumbing — Electrical — Highways<br>Sewer and Water Systems — Dams<br>Fire Protection — Refrigeration<br>1st Nat'l Bk Bldg. NEWPORT NEWS, VA. | <b>W. S. Lee Engineering Corporation</b><br>Consulting Engineers<br>Hydro-Electric Developments, Central<br>Steam Stations, Industrial Building,<br>Institutional Buildings.<br>535 Fifth Avenue Power Building<br>CHARLOTTE, N.C.   |
| <b>Elroy G. Smith</b><br>Consulting and Designing<br>Civil-Hydraulic Engineer<br>Industrial Hydro-Electric Development<br>a Specialty<br>313-313-A Herald Bldg., AUGUSTA, GA.   | <b>Walker Electrical Company</b><br>Electrical Contractors<br>General Offices: ATLANTA, GA.<br>Sales Offices:<br>ATLANTA, GA. COLUMBUS, GA.<br>GREENSBORO, N. C.   | <b>Audit Company of the South</b><br>Charles James Mots<br>President<br>Mem. American Institute of Accountants<br>Certified Public Accountant of Georgia<br>ATLANTA, GA.   | <b>MacElwee &amp; Crandall, Inc.</b><br>Industrial and Civil Engineers<br>Investigations, Reports, Design, Super-<br>vision—Port Development, Piers, Ter-<br>minals, Airports, City Planning, Water<br>Front, Reclamation, Industrial Survey<br>Main Office:<br>705 Terminal Bldg. 11 West 42nd St.<br>ROCHESTER, N.Y. NEW YORK CITY |
| <b>Hornbuckle Contracting Co.</b><br>INCORPORATED<br>Municipal Improvements<br>Industrial Village Utilities<br>ATLANTA, GA.   | <b>Hoosier Engineering Company</b><br>20 North Wacker Drive, CHICAGO<br>Constructors of Transmission Lines<br>Electric—Gas—Oil<br>Thompson Building 225 Broadway<br>SEATTLE, WASH. NEW YORK, N. Y.               | <b>Joe B. Martin</b><br>Quantity Surveys<br>CHARLOTTE, N. C.<br>Sixteen Years Actual Experience  | <b>Gardner &amp; Howe</b><br>Structural Engineers<br>Steel and Reinforced Concrete Buildings,<br>Bridges and Viaducts<br>Porter Building MEMPHIS, TENN.  |
| <b>Wiedeman and Singleton, Inc.</b><br>(Successors to Paul H. Norcross)<br>Consulting Engineers<br>WATER WORKS, SEWERS, SEWAGE<br>DISPOSAL, APPRAISALS, VALUA-<br>TIONS, REPORTS<br>Candler Building ATLANTA, GA.                       | <b>J. V. &amp; R. T. Burkes, Inc.</b><br>General Contractors<br>MEMBER A. G. C. NEW ORLEANS  | <b>Charles Herbert Spring</b><br>QUANTITY SURVEYS<br>835 Jefferson Standard Bldg.,<br>GREENSBORO, N. C.  | <b>C. N. Harrub Engineering Co.</b><br>Member Am. Soc. C. E.<br>Civil and Sanitary Engineers<br>Water Supply, Sewerage, Paving and<br>Structural Improvements<br>705-9 Fourth & First Nat'l Bk. Bldg.<br>NASHVILLE, TENN.  |
| <b>J. Henry Hall</b><br>Engineer<br>Industrial and Public Utilities<br>Financing—Reorganization<br>Reports, Design, Construction<br>LEXINGTON, KY.  | <b>Webb Electric Company</b><br>Electrical Contractors<br>Industrial, Commercial and Institutional<br>Electrical Installations.<br>ANDERSON, S. C.   | <b>McCallum Inspection Company</b><br>Inspection Engineers<br>Specialists in Creosoted Materials<br>116 West Berkley Avenue.<br>NORFOLK, VIRGINIA  | <b>Engineering Service Corp.</b><br>Consulting Engineers<br>Civil-Electrical-Mechanical-Refrigeration<br>COLD and DRY STORAGE WAREHOUSES<br>Reports—Appraisals—Designs—Surveys<br>Docks and Harbor Designs—Ind. Eng.<br>Water Sup.—Sewer Sys.—Oil and Gas Lines<br>HOUSTON, TEXAS, U. S. A.  |
| <b>S. E. Huey</b><br>Consulting Engineer<br>Civil, Structural, Natural Gas<br>Ouachita Bank Bldg., MONROE, LA.<br>City Bank Bldg., SHREVEPORT, LA.  | <b>Fiske-Carter Construction Co.</b><br>General Contractors<br>GREENVILLE, S. C.<br>SPARTANBURG, S. C.   | <b>The Picard Laboratories</b><br>Chemists and Inspecting Engineers<br>Inspection of Cast Iron Pipe, Structural<br>Steel, Cement, Railroad Equipment, etc.<br>Chemical Analysis of all kinds.<br>Representation in all Principal Cities<br>Clark Building, BIRMINGHAM, ALA.                | <b>Robert Cramer</b><br>Consulting Engineer<br>Sewage Treatment Plants and Sewerage<br>Systems—Utilization and Disposal of<br>Industrial Wastes. Power Plants.<br>Design, Construction, Operation, Labora-<br>tory Service, Valuations and Reports<br>847 W. Virginia St., MILWAUKEE, WIS.   |
| <b>J. E. Greiner &amp; Company</b><br>Consulting Engineers<br>Design, Construction, Investigation, Ad-<br>visory Service—Bridges, Docks, Piers,<br>Warehouses and other Engineering<br>Structures.<br>1201 St. Paul St., BALTIMORE, MD. | <b>Poe Piping &amp; Heating Co.</b><br>Contractors<br>For Power Piping, Heating and<br>Sprinkler Systems<br>108 S. Main St. GREENVILLE, S. C.  | <b>Stillman &amp; Van Siclen, Inc.</b><br>Chemists and Chemical Engineers<br>Analysis and Inspection of Asphalt,<br>Paving Materials, Cement, Concrete<br>Building Materials.<br>227 Front Street NEW YORK<br>BEEKMAN 5261   | <b>Algernon Blair</b><br>Contractor<br>MONTGOMERY, ALA.  |
| <b>Shore-Line Builders</b><br>INCORPORATED<br>Carl Weber, Civil Engineer, President<br>Seawalls—Bulkheads—Revetments<br>“WEBER SYSTEM”<br>JACKSONVILLE, FLORIDA.  | <b>Hardaway Contracting Company</b><br>Engineers Contractors<br>Water Power Developments, Bridges<br>COLUMBUS, GEORGIA   | <b>Cornell-Young Company</b><br>INCORPORATED<br>General Contractors<br>Railroads and Highways, Reinforced Concrete and Steam Shovel Work.<br>704 Georgia Casualty Bldg. MACON, GEORGIA   | <b>If you wish to keep posted on the progress of the South, read the MANUFACTURERS RECORD.</b>   |

# DIRECTORY

**ARCHITECTS**  
**CHEMICAL ENGINEERS**

**ENGINEERS**  
**ACCOUNTANTS**

**CHEMISTS**  
**CONTRACTORS**

**GEOLOGISTS**

Detailed classification of specialized work undertaken by those having cards in this Directory will be found in Classified Index.

**The J. B. McCrary Company**

*Engineers*

ATLANTA

GEORGIA

MUNICIPAL IMPROVEMENTS

We design and construct Water-Works, Electric-Light and Sewer Systems—Paving and Road Work.

**Bylesby Engineering & Management Corporation**

*Wholly-owned Subsidiary of  
Standard Gas and Electric Company*

281 South LaSalle Street, Chicago

NEW YORK

PITTSBURGH

SAN FRANCISCO

**Lockwood Greene Engineers, Inc.**

*Plans—Specifications—Reports—  
Appraisals—for Industrial Plants*

NEW YORK

BOSTON

CHICAGO

CLEVELAND

SPARTANBURG

**W. S. BARSTOW & COMPANY**

*INCORPORATED*

**ENGINEERING — DESIGN — CONSTRUCTION  
INDUSTRIAL PLANTS — PUBLIC UTILITIES**

**Consultation Invited on Building Projects**

120 Wall Street  
NEW YORK CITY

412 Washington Street  
READING, PENNA.

**Frederick Snare Corporation**

*Contracting Engineers*

Difficult Foundations and Engineering Problems a Specialty

114 Liberty Street  
New York

PHILADELPHIA

HAVANA

**The J. G. White Engineering Corporation**

*Engineers—Constructors*

48 Exchange Place

NEW YORK

**J. E. Sirrine & Company**

*Engineers*

Factory Design: Hydro- and Steam-Electric Plants; Warehouses, Steam Utilization, Sewage Systems, Appraisals, Valuations, Reports. General Offices: GREENVILLE, SOUTH CAROLINA

**Southern Drilling Company**

*Diamond Core Drill Contractors*

Foundation Testing for Buildings, Bridges and Dams  
Exploration and development of coal and mineral properties.  
SALTVILLE, VIRGINIA

**WE LOOK INTO THE EARTH**

**By use of Diamond Core Drills**

We test foundations for buildings, bridges and dams. We prospect coal and mineral lands in any part of North and South America.

**PENNSYLVANIA DRILLING CO.**

1201-1215 Chartiers Avenue  
Pittsburgh (Elliott), Pa.  
**DRILLING CONTRACTORS**



*"From Research to Plant in Operation"*

**Meigs, Bassett & Slaughter, Incorporated**

*Chemical Engineers*

Research—Design—Engineering

Reports on Projects for Financing

Drexel Building

PHILADELPHIA

**WILEY & WILSON**

*Consulting Engineers*

STEAM AND ELECTRIC POWER PLANTS

CENTRAL PLANT HEATING SYSTEMS

Heating and Ventilating Equipments for Public and Private Buildings

WATER SUPPLY, SEWERAGE AND SEWAGE DISPOSAL

MAIN OFFICE: LYNCHBURG, VA.

BRANCH OFFICE: RICHMOND, VA.

**Kennedy-Rieger Drilling Co., Inc.**

*Engineers & Contractors*

Diamond Drill & Wash Borings

30 Church Street

NEW YORK CITY

**Sprague & Henwood, Inc.**

*Diamond Core Drilling and Wash Borings.*

For Buildings, Bridges, Dams and all kinds of Minerals

**"ANYWHERE"**

Main Office

SCRANTON, PA.

**Mott Core Drilling Company**

*Diamond Core Drill Contractors*

We Test Coal, Clays and Mineral Properties, Foundation Testing, Dams, Bridges, Buildings, Wash Borings, Dry Samples.

MAIN OFFICE

HUNTINGTON, W. VA.

**Robert W. Hunt Company**

*ENGINEERS*

Inspection—Test—Consultation

Materials for Steel and Concrete Structures

General Offices and Laboratories

22nd FLOOR INSURANCE EXCHANGE, CHICAGO

Offices in All Large Cities

Established 1881

**Froehling and Robertson, Inc.**

*Inspection Engineers and Chemists*

Inspection of Cement, Steel, Pipe, Timber, Brick, Tile  
Design and Control of Asphalt and Concrete Mixtures  
Water Analysis a Specialty.

RICHMOND

NEW YORK CITY

**Pittsburgh Testing Laboratory**

ANALYSIS INSPECTION TESTING RESEARCH

PITTSBURGH, PA.

Branch Offices in the Principal Cities

**Southwestern Laboratories**

*Chemical and Testing Engineers*

Inspection Steel and Cement for Bridges and Buildings, Crossed Timbers, Asphalt, Brick, Cast Iron Pipe, Railroad Equipment, Bituminous Pavement at Plant, Chemical Analysis, Etc. Representation at usual points of origin.

FORT WORTH

DALLAS

HOUSTON

AMARILLO

SAN ANTONIO

**Tilghman Moyer Company**

*Bank Architects and Builders*

ALLEGTON

PENNSYLVANIA

**SCHOOL DESKS**

*A. H. Andrews Co.*  
CHICAGO  
107 So. Wabash Avenue



# INTERNATIONAL HARVESTER

*Announces a*

## new 6-cylinder truck



**1½  
TON**

Two wheelbase lengths,  
136 and 160 inches

The Harvester organization presents the Model A-3 as reflecting the century-old reputation for quality that is behind all International products. It offers this lasting quality in a truck of smooth 6-cylinder power at the remarkably low chassis price of \$795.

Look at this new truck... and do not hesitate to judge its value by what you see. For International appearance is an accurate indication of International performance... and the A-3 is no exception to this rule.

International Harvester takes particular pride in announcing this new truck. Even to an organization which has made quality trucks for nearly thirty years, the Model A-3 is an outstanding example of both design and construction.

Here is a truck of great stamina... a fast truck... a powerful and dependable truck. It is beautiful both inside and out. And judged on whatever basis of cost-figuring you may use, you will find it decidedly economical.

**\$795**

for the 136-inch wheelbase  
chassis, standard equipment,  
f.o.b. factory

Go to a dealer's showroom, or to one of the 183 Company-owned branches in the United States and Canada. See the new Model A-3. Then test it in your own way on your own job. Then own it.

And remember that when you do own it, you can rely upon the famous Harvester Company service organization to make sure the Model A-3 will deliver the famous International service to you!

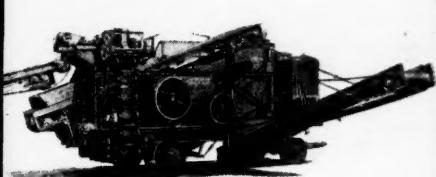
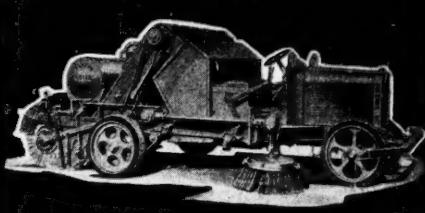
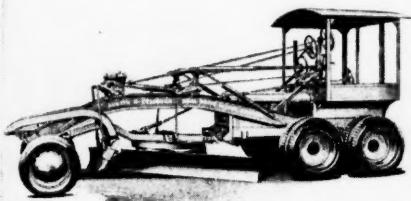
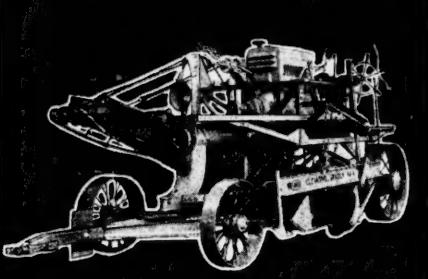
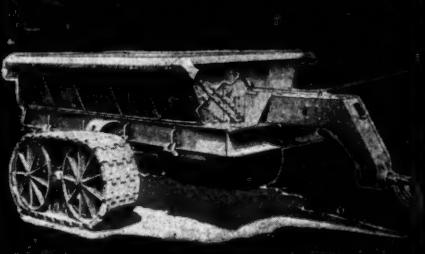
INTERNATIONAL HARVESTER COMPANY  
606 S. Michigan Ave. OF AMERICA (INCORPORATED) Chicago, Ill.

### Model A-3 Features

4-speeds forward and 1 reverse... powerful 6-cylinder, L-Head type engine, 3 ¼-inch bore x 4 ½-inch stroke... 11-inch single plate, vibration-dampened clutch... irreversible cam-and-lever steering gear... semi-elliptic auxiliary rear springs... 4-wheel, mechanical internal-expanding shoe type brakes... 2 wheelbases, 136 and 160-inch.



# INTERNATIONAL TRUCKS

**TANDEM AND 3 WHEELED  
ROAD ROLLERS****CRUSHING AND  
SCREENING PLANTS****MOTOR AND HORSE DRAWN  
STREET SWEEPERS****MOTOR GRADERS****SHOVELS AND CRANES****ELEVATING GRADERS****ROAD GRADERS****CRAWLER WAGONS**

**S**EVENTY-FOUR YEARS of developing a low cost, more efficient line of road building and maintaining, rock crushing and earth handling equipment are reflected in the complete Austin-Western Line of today—just one reason why you profit by adapting the Austin Line to your work. Added reasons are—an improved field service, the better work that results from the proper operation of related machines, equipments just suited to your requirements (available only from a complete line), the undivided responsibility of one manufacturer to deliver properly designed, ruggedly constructed, efficient, easily operated machines.

Our unequalled years of experience will help you to select the most economical, low cost units for your work. Come to headquarters for shovels, graders, rollers, sweepers, oilers and other road building and maintaining, rock crushing and earth moving tools. Spot stocks are conveniently located at twenty-seven points throughout the country to facilitate prompt delivery and forty-three sales offices are ready to serve you with operating data and cost reducing facts.

Write for illustrated catalogs on any or all of the Austin-Western Line. A request to our office at 400 North Michigan Ave., Chicago, implies no obligation.

# Austin-Western ROAD MACHINERY



## Bridge and Highway Builders for 30 Years

**N**O story of the growth and development of the South and Southwest during the past thirty years is complete without special reference to the important bridges, highways, and hydroelectric developments.

In recording these achievements the Hardaway Contracting Company holds a very prominent place by reason of the large number of contracts it has executed, their relative importance and the wide scope of the country over which they extended.

In the years that we have been toiling in the South many hard problems have been overcome. There will be many more in the future. We are confident that any problems you have can be entrusted to the care of our skilled engineers who are responsible for their workmanship, and not excelled by any one. We point with enviable pride to some of the most dependable and useful construction in existence today.

The Hardaway Contracting Company is well organized, every department managed and controlled by men of experience in their particular line, and we pride ourselves on the loyalty of the entire organization.

This organization because of its unsurpassed equipment for handling large contracts is prepared to originate, plan and build any kind of construction.

Now is the time to speed up public improvements. In 1931 \$600,000,000 was expended on the South's highway program. Big programs in engineering and construction are ahead for 1932. The greatest values for public improvements can now be had. Labor is plentiful, costs are low. The South and Southwest favored by nature for continuous outdoor work should lay their plans now.

If your State, County or City is planning construction work now is the time to go ahead.

Our record of accomplishments for municipalities, highway department and private engineers guarantees satisfactory service and justifies your calling on us to figure on your work.

We have a very elaborate booklet showing bridges, roads and dams completed by us. Send for a copy today.

---

**Hardaway Contracting Company - - Columbus, Ga.**

---



## GOOD ROADS . . . EVERYWHERE

Nations, states, counties and towns—all are building good roads. Highway construction is big business. Its equipment manufacture and maintenance is also big business.

And satisfactory service from equipment of this character depends largely upon the gears that are built into it.

For high grade cut gears, used in any type of mechanical device, it will pay to make your specifications read "Gears by Earle."

Earle Gear service can help reduce costs for you, can supply promptly gears of any size, type or material, *cut to your order*. Let us show you the economy of really satisfactory gear service.

**THE EARLE GEAR & MACHINE COMPANY**  
4719 Stenton Avenue, Philadelphia, Pa.

95 Liberty Street, New York  
110 State Street, Boston, Mass.  
117 King Street, Melbourne, Australia

26 Charles Street, London, England  
c/o Andrews & George Co.  
No. 5 Shiba Park, Tokyo, Japan

**GEARS BY EARLE**



## that begin with the purchase

**N**NATURALLY you want pipe that saves money for you in handling, installation and actual performance. Even more, the purchase price must be reasonable.

Such a pipe is Armeo Spiral Welded Pipe. It meets every requirement—physical, mechanical and financial.

We have made it convenient for you to obtain complete information about this "custom-built" pipe. All you need do is mail the coupon properly filled out, and in a few days the whole story will be presented to you—in light of your individual needs.

You will learn why Armeo Spiral Welded Pipe cuts handling and installation costs; why it is trim and round and uniform; why every ounce of metal is utilized; why it speeds flow and increases discharge; why it costs so little and performs so economically.

But clip the coupon and send it on the way to us today. Learn how you can share in the dividends that Armeo Spiral Welded Pipe is earning for hundreds of satisfied users.

### THE AMERICAN ROLLING MILL CO.

Executive Offices: Middletown, Ohio

DISTRICT OFFICES: Chicago . Cincinnati  
Cleveland . Detroit . New York . Philadelphia  
Pittsburgh . St. Louis . San Francisco

## HERE'S THE WAY TO PIPE SAVINGS

THE AMERICAN ROLLING MILL CO.  
Middletown, Ohio

We would like to know how your pipe will reduce installation costs, increase efficiency, and yield bigger profits in service. Also send a copy of your free handbook.

We use pipe for .....

Name .....

Street .....

City ..... State .....  
(MR-1-7-32)

**ARMCO  
SPIRAL WELDED  
PIPE**

*Send for a free copy of our useful handbook*

# TABLE OF CONTENTS

Baltimore, Md., January 7, 1932

## EDITORIALS

|   |            |
|---|------------|
| Value of Good Roads.....                | Cover Page |
| Yesterday, Today and Tomorrow.....      | 35         |
| Cure for Economic Paralysis.....        | 36         |
| Growth of the Natural Gas Industry..... | 36         |
| Farmers Hold Cotton.....                | 37         |
| Untouched Farm Markets.....             | 37         |

## NEWS and FEATURE ARTICLES

|  |                             |
|--|-----------------------------|
| Gas Tax Diversion and Evasion.....                           | By Ernest N. Smith 38       |
| Federal Aid a Federal Duty.....                              | By Earle Duffy 42           |
| \$13,000,000 for Roads Last Year in Tennessee.....           | By Jno. L. Neely, Jr. 43    |
| \$24,000,000 for Arkansas State Roads.....                   | By W. W. Zass 44            |
| \$12,000,000 for Florida Roads in 1931.....                  | By Robert W. Bentley 44     |
| \$14,235,000 Highway Program in Maryland in 1931.....        | By H. D. Williar, Jr. 45    |
| Mississippi's Highway Situation.....                         | By Brown Williams 45        |
| \$25,000,000 Spent on Roads in South Carolina.....           | By Charles H. Moorefield 46 |
| \$17,500,000 for Virginia Highways in 1932.....              | By H. G. Shirley 46         |
| Oklahoma Improved 1200 Miles of Roads in 1931.....           | By L. C. Bernard 46         |
| Louisiana Pushes \$75,000,000 Program.....                   | By Harry B. Henderlite 47   |
| Texas Spending Over \$30,000,000 Annually.....               | By Gibb Gilchrist 48        |
| Kentucky's Big Road and Bridge Program.....                  | By Ben Johnson 48           |
| Alabama to Build 300 Miles.....                              | By L. M. Dinsmore 49        |
| \$35,000,000 Annually for Roads in Missouri.....             | By T. H. Cutler 49          |
| County Highways Under State Control in North Carolina.....   | By E. B. Jeffress 50        |
| Over \$13,000,000 for West Virginia Road Work This Year..... | By C. P. Fortney 51         |
| \$16,000,000 for Georgia Roads in 1932.....                  | By J. W. Barnett 51         |
| Build Helium Compressors at Birmingham.....                  | 52                          |
| Let's Ride Out of the Valley.....                            | By Bennett Chapple 53       |
| Signs of Better Business.....                                | 54                          |

## SPECIAL DEPARTMENTS

*Construction, New Industries and Contracts, Beginning on Page 58*

|                                   |    |  |
|-----------------------------------|----|--|
| Iron, Steel and Metal Market..... | 55 | Machinery, Proposals and Supplies Wanted... 62 |
| New and Improved Equipment.....   | 57 | Industrial News ..... 64                       |
| Trade Literature .....            | 60 | Financial News ..... 72                        |

|  |    |
|--|----|
| Classified Index for Buyers.....       | 82 |
| Alphabetical Index to Advertisers..... | 94 |

## MANUFACTURERS RECORD

Published Every Thursday  
by the

**MAIN OFFICE**  
Manufacturers Record Building,  
Commerce and Water Streets,  
Baltimore, Md.

**MANUFACTURERS RECORD**  
PUBLISHING CO.  
FRANK GOULD, President

**BRANCH OFFICES**  
Chicago—11 S. LaSalle St.  
New York—901 Singer Bldg.

Subscription Rates: \$6.50 a year (in advance); six months, \$3.50; three months, \$2.00 to United States, Mexico, Cuba, Porto Rico, Hawaii and the Philippines. For Canada add postage \$2.00 a year. For other foreign countries add postage \$3.50 a year. Single copies, 20c.; back numbers, one to six months, 50c. each; over six months, \$1.00.

PUBLISHERS DAILY CONSTRUCTION BULLETIN AND BLUE BOOK OF SOUTHERN PROGRESS  
Member, A.B.C.

# LEADITE

Trade Mark Registered U.S. Pat. Office

**For Jointing Cast-Iron Water Mains  
Saves at Least 75%**

*Leadite Tested and Used for Over 30 Years  
Leadite Joints Improve with Age*

The Leadite Co., Girard Trust Company Bldg., Philadelphia, Pa.

**No Caulking'**

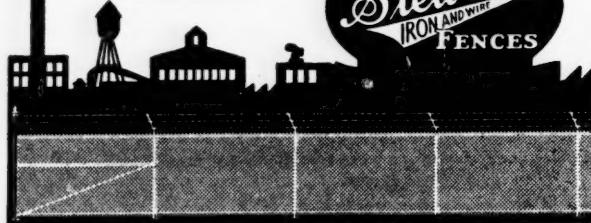
# RYERSON STEEL-SERVICE

Immediate shipment of steel and allied products including Bars, Structural, Sheets, Special Tool and Alloy Steels, Allegheny Metal, Cold Finished Steels, Babbitt Metals, Boiler Fittings, Welding Rod and Equipment, etc. Write for Stock List. Joseph T. Ryerson & Son, Inc., Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City.

## Superior FACTORY FENCE

The name "Stewart" is a guarantee of highest quality at lowest price. For 45 years Stewart Fence has been noted for its durability and long life. Let us figure on your requirements. Write for Factory Fence catalog.

THE STEWART IRON  
WORKS CO., Inc.,  
749 Stewart Block,  
Cincinnati, Ohio



## BRONZE TABLETS



Architectural  
Bronze  
for Banks,  
Buildings and  
Mausoleums

J. S. HEATH CO., Waukegan, Ill.

# Highways above Ground Level

Texas has made rapid strides in highway construction during the past fifteen years. During the fiscal year 1930 Texas expended almost \$33,000,000 for construction of new highways. Ten per cent of the 180,000 miles of public roads is on state and federal highway designated routes.

Texas has also many miles of copper "highways" above ground level—copper highways of industry. These are the transmission lines which make available to industry an ample supply of dependable electric energy for every requirement. The Texas Power & Light Company supplies this sort of desirable service to more than 300 cities, towns and communities in the richest agricultural section of the state.

There are abundant raw materials, markets and sources of labor along the transmission lines which serve these many cities and towns. Our engineers will gladly give you information concerning opportunities which can be recognized easily.

# TEXAS Power & Light Co.

General Offices — Interurban Building  
Dallas — Texas

# Manufacturers Record

Reg. U. S. Pat. Office

Devoted to the Upbuilding of the Nation Through the Development  
of the South and Southwest as the Nation's Greatest Material Asset

Vol. CI No. 1  
Weekly }

BALTIMORE, JANUARY 7, 1932

{ Single Copies, 20 Cents.  
\$6.50 a Year

## Yesterday, Today and Tomorrow

UNDER the caption, "A New Year—A New Hope," the cover page editorial of the MANUFACTURERS RECORD last week recognized the arbitrary division of time into periods as recorded by the calendar. For such purposes as accounting and comparisons of conditions at various stages, the calendar measurement of time is of value. In the experiences of the past and preparation for the future, the passage of time may well be regarded as an uninterrupted continuity. The achievements and the errors of 1931 will be of continuing effect in 1932 and far into days to come. The ledgers of human activity and human endeavor may be balanced at any period, to compute the profit of progress and the loss of retrogression; but, New Year's Day does not break the bond between the past and the present and the future.

So it is that today the American people find themselves in enjoyment of the same blessings, and favored with the same opportunities for human betterment that prevailed yesterday and last week and in the past twelvemonth. The experiences of yesterday and "last year" are the lessons for today and the tomorrows into an indeterminate future; beyond that, no miracle of change has been wrought by the calendar transition from 1931 to 1932. As a breathing spell, as a traditional date for retrospection and for inspiration, New Year's Day has a peculiar value and significance which must not be minimized; in the progress of events, it is a negligible factor.

Outstanding among the blessings of our people is the American spirit, or morale. In this spirit are embodied a fortitude which has prevented violent disturbances in trying times, and a confidence in the country and its institutions, public and private, that borders on unshakable faith. In it is a spirit of hope which promotes cheer. In it are the American disposition to dream dreams and determination to make them come true.

Among the material blessings is discerned a business foundation on which a structure of prosperity well can be rebuilt. The slow pace in manufacturing inevitably must be quickened by ebb tide inventories. The financial structure has proved its inherent soundness. Depression in the prices of agricultural products has been mitigated in no small measure by abundant crops.

Sorry lessons may be turned to profit. The futility of attempting to peg prices for commodities, including labor, has been demonstrated, and respect for the law of Supply and Demand may well be revived. The lesson in lavish expenditure of the people's money by the federal, state and local governments is set forth in unbalanced budgets and unduly high tax rates. Experiments with artificial remedies and stimulants for business depression turn the business mind to consideration and practice of practical operations. Realization of the evils of demagogism and the imperative necessity for sound legislation may be discerned in congressional circles.

The time has come for transition from defense against national economic disaster to constructive work for business revival. Agencies and instruments for this work are in operation or in preparation. The Federal Reserve system stands firm and the facilities of the Federal Land banks are to be expanded.

Especially encouraging at this time is the prospect of relief for the railroads and their reestablishment as a source of income to their owners, the people, and as a tremendous purchaser from many industries and trades; as a great employer of labor and a mighty paymaster. Freight rate increases have been authorized, to augment operating income, and prospective readjustment of wage scales to the general level of all other workers will reduce expenditures in reasonable measure. Constructive amendment of the Interstate Commerce law has been recommended by the

Commission with such emphasis that Congress cannot well ignore that subject.

Also, through the proposed Emergency Reconstruction Corporation, the financial burdens of many rail carriers and sound industries may be relieved until they can catch up their shortages. The railroad outlook undoubtedly is brighter, with proportionate promise for the country as a whole.

Amendment, or modernization, of the Anti-Trust laws also looms on the business horizon, to loosen the bonds where unduly tight, without affording improper license.

Estimates that building construction this year will run 17.5 per cent higher than in 1931 are cheering in the promise of increased employment in many industries and trades and of greater purchasing power for many people. An agency to ease the financing of home building is contemplated, and the low prices at which material and labor can be obtained also will promote such construction. Road construction by federal, state and local funds is a continuing activity of tremendous weight in the employment scale, and has been encouraged by Nature through a winter season which so far has been favorable to outdoor work.

Above all the other American economic advantages is the self-sufficiency of this country. Within its borders is a ready market for 95 per cent of its industrial production. Unlike most other countries, it is not largely dependent on outside markets for its trade. The progressive increase of wealth which is essential to assure profit comes steadily from our fields and forests and mines and wells, and is transformed into dollars by industry. These dollars are passed on to the people for American living standards, and for the purchase of necessities and luxuries in volume and of quality amazing to the people of other lands.

The plans of yesterday are to be translated into the performances of today, and the plans of today will be accomplished facts tomorrow.

The MANUFACTURERS RECORD sees happy days ahead for a period far beyond the limits of the new calendar year.

### Cure for Economic Paralysis

**B**ELOW expressed by the MANUFACTURERS RECORD that business recovery for the United States is not dependent primarily on foreign conditions is thus corroborated by the Monthly Survey of the Guaranty Trust Company:

"This country's economic system is less dependent on foreign conditions than most others and, while it would be a mistake to minimize the importance of foreign influences, it would be no less erroneous to conclude that the United States must remain in a state of economic paralysis until normalcy is restored in Europe."

It is true that foreign governments and private enterprises owe more than \$15,000,000,000 to the American Government and American private investors. The American people would be glad to get this money

and could find use for it. To say that the collection of these debts is necessary before progress can be made by a nation whose wealth is computed at \$360,000,000,000 is fallacious.

The American domestic market is the greatest market in the world. It will repay the money invested in its development. This fact cannot be emphasized too often or too strongly. Realization of this fact will awaken the United States from the "state of economic paralysis."

---

### Growth of the Natural Gas Industry

**A** RECENT review of the natural gas industry by Ernst & Ernst, nationally known accountants and auditors, is of particular interest to the South as it is one of its major industries. This section produced and consumed more than 60 per cent of the country's natural gas, which in 1930 amounted to more than 1,917,000,000 cubic feet. The value of the gas consumed was in excess of \$413,000,000. As the review points out, natural gas is produced in 26 states, and is now consumed in 38 states and the District of Columbia. The industry represents a capital investment of more than \$2,000,000,000. Natural gas through more than 94,000 miles of pipe lines is made available in many cities distant from the gas fields.

The December 15 bulletin, issued by Ernst & Ernst, calls attention to the fact that it was not until 1927 that natural gas was transported considerable distances from the producing area. Improvements in pipe and equipment about that time have permitted the extension of these lines until today there are two trunk lines which are nearly 1000 miles long. These run from the Panhandle district of Texas—one to Chicago, and one to Eastern Indiana. About 14,000 miles of pipe lines were constructed during 1930. About one-half of the 94,000 miles are trunk lines running direct from the producing field to the consuming centers. The remainder of the rapidly expanding pipe line network is made up of feeder lines to cities in areas adjacent to the trunk lines. Continuing the bulletin states:

"Generally speaking, the consumption of natural gas may be divided into two classifications: Industrial, which accounts for about 80 per cent of consumption; and domestic, using about 20 per cent. The most important single use for natural gas is as a fuel. Of that consumed industrially, more than half is used by the oil companies as fuel for natural gasoline plants, fuel for gas engines used in drilling and pumping, and fuel for use in boilers and stills. Other industrial uses include fuel for oil refineries, electric power plants, steel mills, cement plants, glass works, chemical manufacturing plants, sugar refineries, bakeries, sulphur mines and salt works.

"Conversion of natural gas into other commercial products and also the development of certain by-products have been in progress for some years and many of these products have established markets. Carbon black used in the manufacture of ink, automobile tires, phonograph records, paints, etc., is obtained in substantial quantities as a residue from the burning of natural gas for this purpose. Also a substantial amount of natural gas is con-

densed and stored under pressure and distributed thus in containers under trade names in communities where the facilities of natural or manufactured gas are not available."

It is worthy of note that the greatest extension of natural gas pipe lines and expansion of the industry has been made since 1929. It has been able to take advantage of low construction costs prevailing and in this respect its management has shown a vision and confidence that have been emulated by few of the great industries of the country. It is building up a distribution system which in the future should prove the wisdom of the investment made in the last two years.

## Farmers Hold Cotton

**I**T is estimated that at least 4,700,000 bales of this year's cotton crop are being kept off the market by the growers. The Fort Worth Star-Telegram, in referring to the larger number of bales held on the farms compared with last year, states that while this does not offset the increased production, it at least mitigates the price-battering effect of the bigger crop. Of more importance to cotton growers is the effect that retention of so large an amount of cotton in the hands of the original producers is likely to have on next spring's planting.

The Star-Telegram calls attention also to the fact that the 4,700,000 bales held off the market are owned not by the small farmer who must reduce cotton acreage and increase food and feed crops, but by farmers who are enabled to hold their cotton because they have practiced diversification in the past, or have sufficient capital to make the enterprise a simple business step. The situation indicates that there are some cotton farmers who are able to do as they wish with their crops, and this is of vast encouragement. Also it will bring home to the small cotton farmer, who has not appreciated the importance of growing food and feed for home consumption, a practical demonstration of the value of diversification at a time when the lesson will do him the most good.

## Advertising Helps Sales

**I**N an analysis of factors which have enabled many concerns to maintain or increase sales volume or profits during the depression, the Department of Commerce makes conspicuous mention of advertising. From replies received in the course of its investigation of the business situation, the Department shows that a larger number of firms included statements on advertising than on any other single topic, "which indicates the importance attached to the value of advertising by these successful companies."

## Untouched Farm Markets

**W**ITH all our boasted prosperity and elaborate sales campaigns of two years ago, recent Census figures disclose that we have barely made a dent in developing the farm market as an outlet for machinery and equipment manufacturers.

In 1930 there were more than 6,297,000 farms in the United States. These farms under depression prices produced a gross income that year of approximately \$10,900,000,000. In each of the two previous years, the income was in the neighborhood of \$16,000,000,000.

We speak of the great progress made by our country and how its people enjoy comforts and conveniences beyond anything known in history. On the farms of the United States, however, there is still much to be done to make conditions comparable with the accepted idea of the higher standards of living.

Water is piped into less than 16 per cent of the farm dwellings of the country. Only 994,202 farms, to be exact, have the convenience of running water in the home.

In 1930, only 841,310, or 13.4 per cent of the farm dwellings of the United States were lighted by electricity. Farms with telephone service show a better proportion, for 2,139,000, or 34 per cent, of all farms have telephones. It is understandable, but at the same time surprising, that 3,650,000 farms, 58 per cent of the country's total, reported 4,134,000 automobiles. The percentage of motor trucks, however, was low with only 13.4 per cent of all farms so equipped having 900,385 motor trucks, while tractors were on 13.5 per cent of all farms which reported 920,395 tractors in use.

Power equipment for all farm use was likewise low. The farms reporting electric motors for farm work numbered 256,663, or 4.1 per cent, but they used 1,381,000 motors; and 945,000 farms or 15 per cent used 1,131,108 stationary internal combustion engines.

As shown from the following tabulation of the 1930 census, the South with 3,474,000 farms offers a prospective market that should be developed by the alert producer, and aggressive sales efforts on the part of manufacturers of machinery and equipment suitable for farm use should bring results.

Specified Equipment on Southern Farms

|                                  | Number<br>Farms<br>Reporting | Per Cent<br>of all<br>Farms | Number<br>on<br>Farms |
|----------------------------------|------------------------------|-----------------------------|-----------------------|
| Automobile .....                 | 1,426,231                    | 41.0                        | 1,521,077             |
| Motor Trucks .....               | 239,987                      | 6.9                         | 254,441               |
| Tractors .....                   | 151,970                      | 4.3                         | 169,552               |
| Electric Motors .....            | 25,219                       | 0.7                         | 35,072                |
| Stationary Gas Engines.....      | 106,574                      | 3.0                         | 123,428               |
| Water Piped into Dwellings...    | 202,518                      | 5.8                         | .....                 |
| Dwellings Lighted by Electricity | 155,027                      | 4.5                         | .....                 |
| Telephones .....                 | 576,607                      | 16.6                        | .....                 |

One of the greatest wastes in business is the inability of many advertisers to stick to adopted programs.—*Printers Ink*.

# Gas Tax Diversion and Evasion

*These Twin Evils Threaten the Existence of the Gasoline Tax as a Main Sinew of National Road Building*

**W**HEN the gasoline tax was inaugurated, the states entered into a contract with the motor vehicle owners to the effect that the proceeds of the levy would be used only for purposes of road maintenance and construction. Furthermore, there was a tacit understanding that the rate of the tax would not bear too heavily against the class on which it was levied and that it would always bear an equitable relation to the road-building needs of the various states.

Of course, the understanding was implicit rather than explicit. There was

BY  
**Ernest N. Smith**  
 Executive Vice-President of the  
 American Automobile Association

no actual hard and fast contract. But no one reading the discussions in the legislatures of the various states at the time the gasoline taxes were enacted, can for a moment doubt that the motor vehicle owners were given to expect that

this money would at all times be used for purposes from which they derived direct benefits as a class and that it would bear a fair ratio to benefits received. Hence, the universal acceptance of the levy.

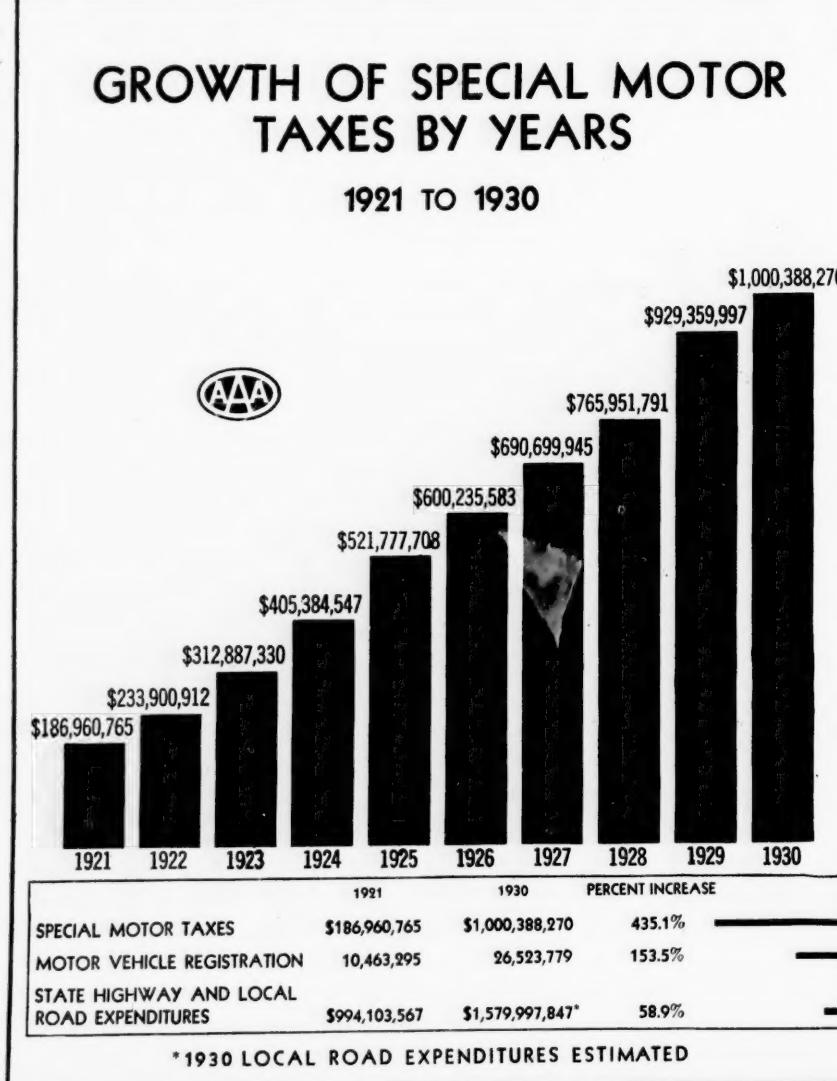
On both counts, our lawmakers have broken faith in the most flagrant manner. The gasoline tax is being used more and more for purposes that are entirely alien to road-building and maintenance. It has been pyramided until in some instances it has now reached the economic point of diminishing returns.

The first modest one cent gasoline tax was levied in Oregon in February 1919. Today, the tax is in effect not only in every state, but many communities, tempted by the lure of easy money, have superimposed local gasoline taxes on the top-heavy state levy.

Five states have a two-cent tax. Eleven have a three-cent tax. Sixteen have a four-cent tax. Eleven have a five-cent tax. Five have a six-cent tax. And one, Florida, has a seven-cent gasoline tax! In 1930, the last year for which complete figures are available, there was collected from the gasoline tax a total of \$494,683,410, as compared with \$4,732,365 in 1921.

## \$60,000,000 Loss to Road-Building Through Evasion and Diversion

As a result of the pyramiding of the tax, the racketeer has entered the field and is doing a big-time business. The racket is well organized. In all probability, the amount of gasoline money lost through evasion of the tax now considerably exceeds the revenue loss to road-building through diversion. It is safe to say that in 1931, gasoline bootleggers stole \$40,000,000 of money paid by highway users, while our lawmakers have dipped their hands into the funds to the extent of close to \$20,000,000 for purposes of general state administration. Thus, evasion and diversion of gasoline taxes have, in the twelve-month period, accounted for a loss of some \$60,000,000 of road-building money, sufficient to build a standard, concrete two-lane highway



from New York to Salt Lake City, a distance of 2400 miles.

By all odds, our lawmakers are more to blame than the lawbreakers for this episode in our calendar of national scandals. For it was our lawmakers who broke faith by resorting to the diversion of the tax and who, by pyramiding it, made it profitable for the racketeer to enter the field. The result is that the double nemesis of diversion and evasion now threatens the entire foundation of the gasoline tax structure and brings the prospect of a national road-building holiday.

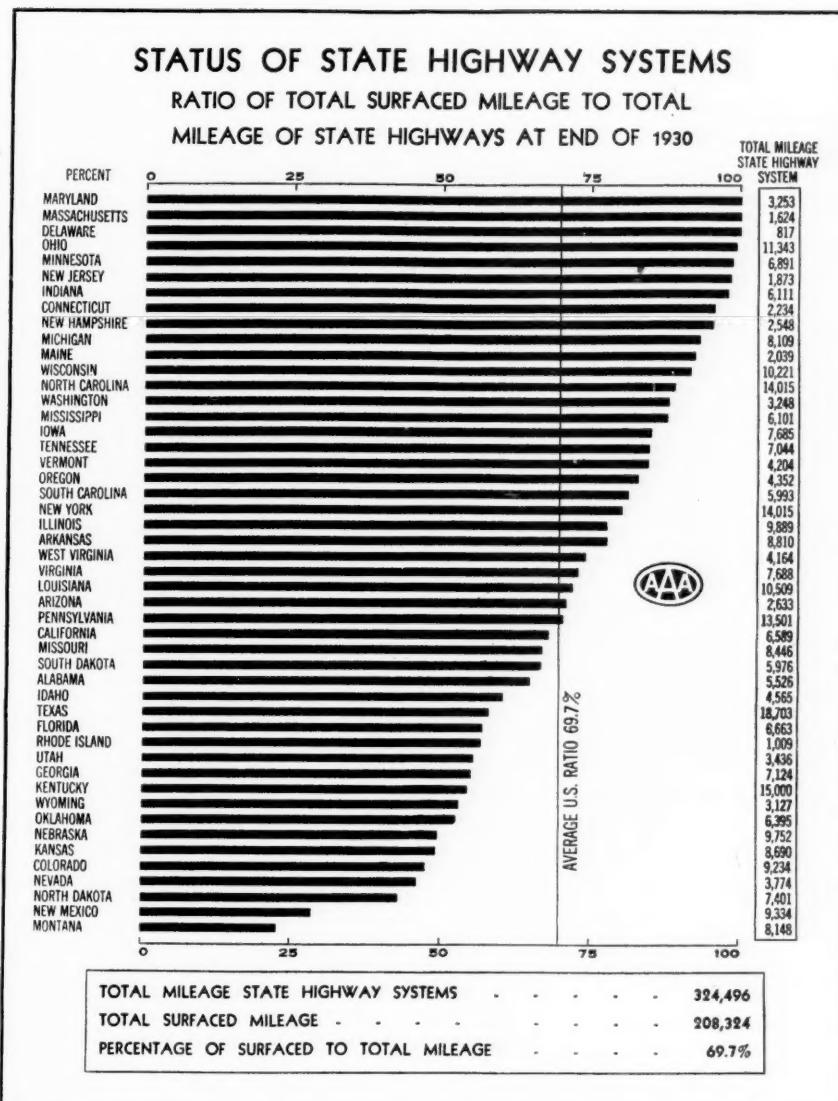
Up until this year, an alert public opinion served to hold diversions within bounds. However, under the double impulse of unemployment relief and the demand of powerful taxpaying interests for reduction in their taxes, the temptation to use gas tax revenue for general purposes became greater than ever before.

### Wholesale Pyramiding and Diversion of Gas Taxes in Sight

To date, 17 state legislatures have convened in special session and in practically every one of them bills were introduced providing specifically for increases in gas tax levies to create a dole for the unemployed. Now, relief for unemployment is a worthy objective, but why should one class of taxpayers be asked to pay the cost of what is essentially a state and community obligation—and more especially so in view of the fact that motor vehicle property is now paying the heaviest tax on any form of non-luxury property in the United States, a total tax of 18.3 per cent per annum on the basis of the 1930 figures. And yet we have the extraordinary spectacle of the legislatures in such wealthy states as Illinois, Pennsylvania and California strenuously engaged in an effort to saddle the burden of unemployment relief on the motorists through an increase in the gasoline tax. One bill in the Illinois Legislature would increase the gas tax to provide \$10,000,000 for unemployment relief in a period of six months! Numerous other instances could be cited to show that the country is confronted with a threat of wholesale pyramiding and diversion of gasoline taxes.

### Southern States Practice Diversion on Big Scale

Let us review briefly what has happened during the last twelve months in this diversion rocket. Texas has diverted \$7,000,000 to the state school fund. Florida diverted \$4,250,000 to the school fund. Georgia has diverted \$4,000,000



to school purposes. Louisiana has diverted \$1,250,000 of gas tax funds for port development and \$1,000,000 for the school fund. At an election in November 1930, New Jersey authorized a \$10,000,000 bond issue for charitable and penal institutions and a bond issue of \$7,000,000 for the development of supplies of drinking water, both of these to be retired from an increase in the gasoline tax from two to three cents. Oklahoma recently turned over \$750,000 to the Governor for unemployment relief purposes from gasoline receipts for the first six months of the year. The Governor of Indiana made a determined effort to secure for the general fund \$13,000,000 of gas tax money.

And so it goes. Food, clothing and shelter for the unemployed! The education of the children and the building of institutions of higher education for minors and adults! Improvement of trade through harbor development! Pure drinking water to safeguard the health of the public! All of these are necessary and admirable activities, but what rela-

tion have they to the building or maintenance of highways?

Before leaving the subject of diversions, it might well be pointed out that powerful business interests with no axe to grind are in many instances encouraging our not unwilling lawmakers in the evils of their way. I might cite as a case in point the propaganda of large organizations of real estate owners. In their effort to secure reduction of taxes on real estate, these groups have pointed to the gasoline tax as a ready source of revenue for purposes of general state and local administration. Before heeding such counsels, our bewildered legislators would do well to reflect seriously on the fact that in the bonanza days of suburban developments, no group was more enthusiastic for roads than the real estate men who are now perfectly willing that there should be a road-building holiday. If you cannot sell lots, why build roads! Nor should they lose sight of the fact that at the present time, motor vehicle property is paying an annual tax which is twelve times as heavy

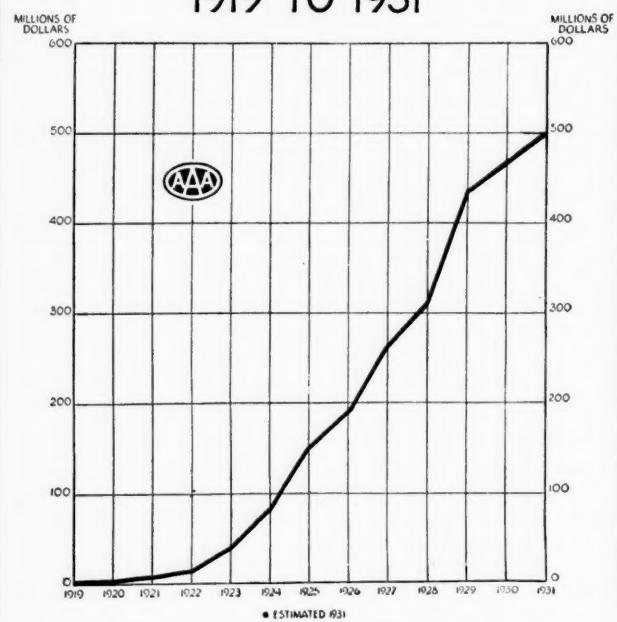
## GROWTH OF GASOLINE TAX RATE BY YEARS

| YEAR | NUMBER OF STATES IMPOSING GAS TAX | STATES IMPOSING GAS TAX AT FOLLOWING RATES PER GALLON |    |    |     |    |     |    |     |    |    |
|------|-----------------------------------|---|----|----|-----|----|-----|----|-----|----|----|
|      |                                   | 1/4¢  | 1¢ | 2¢ | 2½¢ | 3¢ | 3½¢ | 4¢ | 4½¢ | 5¢ | 6¢ |
| 1919 | 4                                 | 1   | 2  | 1  |     |    |     |    |     |    |    |
| 1920 | 5                                 | 1   | 3* | 1  |     |    |     |    |     |    |    |
| 1921 | 15                                | 1   | 13 | 1  |     |    |     |    |     |    |    |
| 1922 | 19                                | 1   | 16 | 2  |     |    |     |    |     |    |    |
| 1923 | 35                                |   | 15 | 11 | 1   | 8  |     |    |     |    |    |
| 1924 | 36*                               |   | 7  | 17 | 2   | 9  |     | 1  |     |    |    |
| 1925 | 45                                |   | 3  | 21 | 1   | 12 | 3   | 4  |     | 1  |    |
| 1926 | 45                                |   | 2  | 22 | 1   | 9  | 3   | 5  | 1   | 2  |    |
| 1927 | 47**                              |   |    | 13 |     | 16 | 1   | 11 | 1   | 5  |    |
| 1928 | 46                                |   |    | 13 |     | 14 | 1   | 11 |     | 7  |    |
| 1929 | 49                                |   |    | 8  |     | 9  | 1   | 20 |     | 8  | 3  |
| 1930 | 49                                |   |    | 7  |     | 11 | 1   | 17 |     | 10 | 3  |
| 1931 | 49                                |   |    | 5  |     | 11 |     | 16 |     | 11 | 5  |

\* DISTRICT OF COLUMBIA ADOPTED GAS TAX IN 1924 AND IS COUNTED AS STATE IN THIS TABLE

\*\* ILLINOIS GAS TAX LAW DECLARED UNCONSTITUTIONAL DURING 1927

## GROWTH OF GASOLINE TAX RECEIPTS 1919 TO 1931 \*



### Professional Operators Find Many

### Ways to Evade Tax Payments

There are two classes of violators, the professional who operates on a big-time scale, and the amateur who seeks to augment the family income by pilfering the gas tax. But let's adopt the policy of the government in enforcing the dry law and deal with the big fellows first. All the ingenuity at the command of men who deal in millions is employed. They operate under dummy corporations using "wildcat" refineries which receive and market fuel without reporting it for tax purposes. They set up paint factories and other plants to show records of gas sold for tax-free purposes but which is actually sold for motor vehicle use and the tax pocketed. They move gasoline in tank cars labeled "distillate," which is non-taxable, or blend low grade gasoline with tax-free naphtha or kerosene and after selling it pocket the tax. They juggle gallonage figures on receipts, forge documents, conspire with railroad employees to report shipments improperly and corrupt state officials or take them into partnership. They buy gasoline in a state "for export" purposes, tax-free, and then maneuver the shipments so that the gasoline is returned to the same state. They buy gasoline in a state where the tax is low, pay it, and then sell the fuel in a state where the tax is high. These two latter methods are probably the most commonly employed in this gigantic racket.

Another of the most common forms of

as the tax on rural real estate and seven times as heavy as the tax on urban real estate.

### Lower Returns Despite Increased Rate in Several States

The higher the tax above a certain point, the less the ratio of returns becomes and the more intensive become the activities of organized bootlegging. The ramifications of this tax evasion racket, which results in an annual loss of some \$40,000,000 to the states, are such that a comprehensive analysis is beyond the scope of this article. About all I can hope to do is to indicate the extent of it and the manner of its operation.

Probably the best way to gauge the activities of the racketeer is to examine the returns in some of the states under the lower and the higher tax rates. In Oklahoma, the four-cent tax produced \$1,097,050 in August, 1930, while the five-cent tax only brought in \$629,108 in August, 1931. Wisconsin increased the gas tax from two to four cents, naturally expecting a 100 per cent increase in revenue. Instead, the revenue increased only about 45 per cent. For the last month that Wisconsin had the two-cent rate, taxes were returned on 28,000,000 gallons. For the first month under the four-cent rate, taxes were returned on less than 18,000,000 gallons. The sponsors of the political "grab bag" in Florida were considerably disappointed when they ascertained that the new rate of seven cents a gallon brought in less rev-

enue than the six-cent rate. The experience of Pennsylvania is particularly noteworthy, since this was the only state that reduced the rate of the tax. In May, 1930, Pennsylvania collected \$2,681,448 under the four-cent tax, while in May, 1931, collections under a three-cent tax soared to \$3,880,815. Thus, with a tax one cent less, collections were \$1,200,000 greater. In May, 1930, gasoline taxes in Pennsylvania were reported on 67,000,000 gallons, while in May, 1931, under the lower rate, taxes were reported on 126,556,949 gallons. Quite clearly, the smaller tax holds out less attraction to the racketeer.

Philadelphia has a population of 2,000,000. Tax officials were astounded to find that in the period June 1 to December 31, 1930, Allegheny City, a suburb of Pittsburgh, with a population of 132,000, had reported the consumption of more gasoline than the City of Philadelphia. On the basis of this astounding discovery, Pennsylvania officials estimated that the City of Brotherly Love alone was paying tribute to gas tax racketeers to the extent of \$600,000 a year.

In the first three months of 1931, gasoline tax delinquencies in California amounted to \$1,375,075. To date, retailers who made returns but who failed to pay the taxes, have beaten the state out of approximately \$2,250,000. If the state lost this amount through one form of racketeering, it requires little imagination to appreciate how much it must have lost through half a dozen other methods of evasion less easy to detect.

evading the tax is for a filling station operator to conduct his business in a bona fide manner and then "sell out" and seek new fields when the time comes to report tax collections to state authorities. As the tax in most cases amounts to from five to ten times the amount of what would have been a legal profit during the period of operation, the dealer has an incentive to pull up stakes. It is only fair to the states, however, to point out that officials are wise to this form of evasion and instead of allowing from 60 to 90 days for tax reports as formerly, have as a general rule narrowed the time margin for such reports.

#### Abuse of Refund Privilege

##### Widespread

The question of refunds has also become more serious with the mounting of the rates. Most states allow exemption for fuel used for non-highway purposes such as tractors, farm machinery, stationary engines, aircraft, motor boats and the like. Tax officials have been astounded to learn how great the gasoline consumption is for tractors, cleaning gloves, etc., or other purposes which require only small quantities when no tax is involved.

Comparison of tax refunds in Iowa and South Dakota, two great farming states, is most illuminating. Both states provide refunds for virtually the same non-highway purposes. Iowa has a three-cent tax and South Dakota four. While Iowa has 59,038 tractors, tax refunds during the first six months of 1931 amounted to only \$649,830, while in South Dakota, which has only 27,226 tractors, refunds in the same period amounted to \$1,005,592, or nearly 50 per

cent of gross collections. On the basis of tax refunds, it would seem that tractors in South Dakota consumed an average of 923 gallons of gasoline in the six months' period, as compared with an average of only 367 gallons in Iowa.

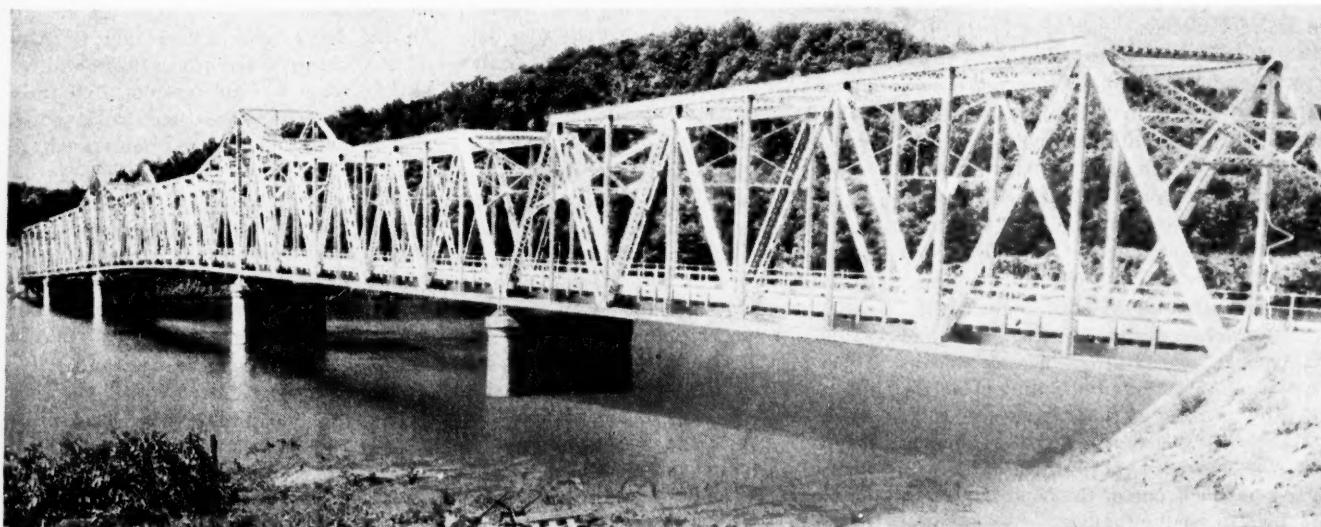
Take the "for export" phase of the racket, for example. A tanker loads up with gasoline in Pennsylvania "for export" to a nearby state. Then after plying the Delaware River or nearby waters for a few hours, the tanker is headed back into Pennsylvania under cover of darkness and unloads. If the cargo was 10,000 gallons, the three cent tax in Pennsylvania means a profit of \$300.

Virtually the same methods of operation are employed in using tank cars or trucks. The tank car is filled with gasoline "for export" to a nearby state and upon reaching the destination, with the aid of some unscrupulous railroad employee eager to make a dollar, or sometimes through regular channels, is reconsigned to the state where the shipment originated. The fuel is then sold and those in on the deal pocket the tax.

#### Lack of Uniform Gas Tax Rates Boon to Bootleggers of Gasoline

There is a certain risk of being apprehended in this business of diverting shipments, however, so let's look at an angle where the racketeer plays a little safer. For instance, buying gasoline in a low tax state and selling it in a state where the tax is higher. Missouri can be used for purposes of comparison. There the tax is fixed at two cents a gallon. But surrounding Missouri are Iowa, Illinois and Kansas, each with a three-cent tax, Nebraska with a four-cent tax, Oklahoma and Kentucky with a five-cent tax, and a little further away, but offering greater reward for illegal operations, are Tennessee and Arkansas with a six-cent tax. The bootlegger loads up with gasoline in Missouri, pays the tax, and then unloads in Tennessee, say, without reporting to authorities of that state. Thus his profit is four cents a gallon on the fuel.

How can this racket be stopped? No single formula to stop lawlessness can be offered. But certain remedies suggest themselves. If the lawmakers stop diverting the tax, they will in a large measure end the incentive to pyramiding it. If they quit pyramiding it, or find it possible to reduce it to reasonable rates which are also the rates of highest productivity, they will take the profit out of the racket, as far as the bootlegger is concerned. It is impossible to prescribe a uniform tax for all states. At the same time, however, it is clear that divergencies in tax returns in states immediately adjoining each other offer the best operating conditions for the racketeers. Experience has proved that the 60 to 90 days formerly allowed retailers to make their returns to the state was too long and made it possible for fly-by-night operators to carry on business and also made it more profitable for small retailers to leave the state with the tax money in their pockets. The states are alive to this and are shortening the collection periods. Inclusion in state laws of stronger safeguards for the licensing and bonding of all dealers would materially help, as would more adequate provisions for checking shipments and sales. But unquestionably the most important remedy is for the states to keep the tax at a rate which will be fair to the motorist, profitable as a tax, and unprofitable to the bootlegger.



Modern Steel Bridge Over the Niangua River in Camden County, Missouri

Located on U. S. Route 54 this structure has been painted with aluminum paint to make it readily visible at night as well as to add to the surrounding scenic beauty

# Federal Aid A Federal Duty

In 1906 automobile registrations for the first time exceeded 100,000. The year 1931 may be considered the twenty-fifth anniversary of the automobile ascendancy to public favor. Motoring a quarter of a century ago was an adventure. Today it is second nature. In 1900 there were some 20,000,000 horses, mules, asses and burros. There are now many more motor vehicles than that. The rapid increase in the ownership of automobiles is a story interwoven with highway development.

In 1905 Dwight B. Huss won the first transcontinental automobile race, crossing the trail of mud and woe between New York and Portland, Oregon, in the then remarkable time of 44 days, which was made largely because of Mr. Huss' training as an engineer, and a husky pair of shoulders.

It is only by thinking back to those days that a full appreciation can be had for the road building accomplishments that have taken place and for the road building methods that have been devised. When Huss made his epic journey there were scarcely 150 miles of high type rural roads in the country. At the end of 1930, the last year for which complete figures are available, of the 324,500 miles on the state highway systems, 226,200 miles were surfaced and milage of this 84,112 miles are high type pavements.

## Federal Aid Important Factor in Road Progress

With slightly more than 3,000,000 miles of roads in the United States, there are many national and local problems easier of solution. Yet through the realization of one principle considerable progress has been made. That principle is that the most used roads should be improved first.

The creation of the state highway systems which contain the most used and the connecting highways in each state is a recognition of this important principle. Further stress on improving the most used roads is given in the development of the Federal Aid system, which in itself has been one of the most important factors in road progress.

Federal Aid was introduced for a number of reasons. The most obvious is the need for a centralized authority for assuring a nation-wide system of con-

BY  
Earle Duffy  
Chicago, Ill.

nected highways for transcontinental and inter-state travel. Clearly the Federal Government could not require the states to cooperate in the construction of a national system of highways without itself contributing funds to be used on these roads.

Road building as a Federal duty was first evidenced in 1806 when Congress passed a law providing for a highway from Cumberland, Maryland, to the Ohio river, a project that was later extended to the Mississippi river at St. Louis. The total appropriation for this road was about \$7,000,000.

## Steady Progress in Developing Federal-Aid Highways

When the Federal aid road laws were adopted in 1916 scarcely any headway had been made in the placing of high type pavement on the most used roads. In that year \$75,000,000 was appropriated by Congress to be expended in co-operation with the states over the ensuing five-year period. During the first few years of its existence, Federal aid was applied both to inter-state highways and to local roads. The supplementing Federal highway act of 1921 definitely established the principle that Federal aid money should be applied to a definitely determined Federal aid system which was laid out jointly by the state highway departments and the U. S. Bureau of Public Roads.

In brief, the Federal aid system must not exceed seven per cent of the total road mileage in the state. Not more than three-sevenths of the roads may be roads of interstate importance. The remainder must be roads of inter-county value. Sixty per cent of the money provided by the Federal highway acts, and of subsequent acts, must be expended on the inter-state roads until such roads are complete. With the consent of the state highway department all money may be applied to inter-state or primary roads until they are surfaced satisfactorily. It is noteworthy that funds have been applied to the most used roads in the order of their importance.

The effect of Federal aid was imme-

diate. At the time it was introduced few states had adequate highway departments and most states with highway departments had not endowed them with executive authority. The Federal Aid act demanded that a state provide itself with an efficient highway department in order to become eligible for assistance. This demand alone has been of prime importance in making highway building one of the most business-like activities of the state.

## Responsible for Establishment of State Highway Departments

Almost without exception each state now has a highway department manned by some of the country's best highway engineers. This, together with the fact that the Federal road laws demand rigid adherence to the specifications and requirements laid down by the U. S. Bureau of Public Roads, has made state highway building probably more free from political influence than any other governmental activity and has assured the taxpayer of proper spending of his road contributions. In state highway work by far the largest share of the money available is going into new construction rather than into maintenance. In local road building maintenance in most cases eats up more than half of the money at hand.

That Federal Aid is worthwhile can be seen from figures given in the report for the fiscal year ending July 1, 1931. At that time, there were 196,877 miles on the Federal Aid system. Of this mileage a little more than 76,000 miles was of high type surfaces. Intermediate type surfaces and low type surfaces totaling about 77,000 miles were in service. Graded and drained roads accounted for 28,850 miles or about fourteen per cent of the total mileage, while unimproved roads totaling 14,500 miles or about seven per cent were included in the system.

These figures show two things. One is that excellent progress has been made on the Federal Aid system, which be it remembered, is largely contained in the state highway systems. The second important thing is that there is still much to do towards bringing the Federal Aid system up to the desired standard. Thousands of miles of Federal Aid roads classified as being surfaced with inter-

mediate types or low types should be elevated to the high type classification because of the large volumes of traffic they carry. Likewise thousands of miles of graded and drained roads and unimproved roads should be elevated to the low type and intermediate type stage and many of them really deserve high type surfaces.

In the widely quoted words of Thomas H. MacDonald, chief of the Bureau of Public Roads, "We pay for good roads whether we have them or not and we pay less if we have them than if we have not." This is particularly true of the roads that carry noteworthy volumes of traffic.

### High Type Pavements Cut Motor Vehicle Operating Costs

The average motorist rarely takes the trouble to calculate the cost per mile of travel. Yet there is much to be learned about the sort of roads that should be built by analyzing car operating costs. Professor T. R. Agg of Iowa State College, through exhaustive investigations, reports that high type pavements save at least two cents per mile over the cost of operating a car on inferior roads and one cent a mile over the cost of operating on intermediate type surfaces.

There are, however, distinct savings that go with good pavements that may be seen without the aid of a slide-rule. For illustration, a motorist in Little Falls, Minnesota, recently drove over dirt and gravel roads to Sauk Center, a distance of 43 miles. The road was slightly rough and rather heavy. Returning he drove over a paved road by way of St. Cloud, a distance of 82 miles. He kept a careful check on the gasoline used and found that he consumed in excess of a gallon more in traveling over the 43 miles of inferior road than he did on the 82 miles of concrete. He, therefore, traveled nearly twice the distance with less gasoline on a paved road than on the dirt road.

To show the savings that come with large mileages of first class pavement, we need turn only to Iowa. During the last five years that state built some 3400 miles of concrete pavement for which less than \$100,000,000 was spent. These pavements are all on the state highway system and easily carry an average of 500 vehicles per mile per day. Estimating that motorists in Iowa are saved one cent a mile in travel costs, the total for a single year is \$6,000,000. This means that from the point of car operating costs alone the pavements will have been paid for within 15 or 20 years. When lower maintenance costs and the other benefits that go with good pavements are considered it is apparent that

paving heavily traveled routes is only following out good business judgment.

### Federal Aid Encourages Higher Road-Building Standards

Federal Aid and the agency through which Federal money is expended, the U. S. Bureau of Public Roads, has played an important part in road building in all states. Federal Aid laws demand that the best highways be built with the funds at hand. This has resulted in the building of great mileages of pavements with the future as much in view as the present. Federal Aid has helped bring home the realization that the road problem can only be conquered by building well, by making each mile of heavily traveled road last as long as

possible and by cutting maintenance costs to the very bone.

The Federal Aid system of roads is in reality the skeleton for the highways of the United States. When this system is completed, half the motoring done on country roads will be over adequate travelways. Federal aid brings with it benefits far beyond the actual cost. Even on the present basis of Federal contributions wherein \$125,000,000 annually is invested in roads along with the state contributions Federal participation is really quite small. In 1930, for instance, Federal Aid was only about 5½ per cent of all money spent annually for local and state roads in the entire country.

Federal Aid has been very much of a bulwark in the present economic let-down. It has helped keep thousands and thousands of men at work, work that is nationally distributed.



Dardanelle Bridge Connecting Pope and Yell Counties, Arkansas

### \$13,493,000 for Roads and Maintenance Last Year in Tennessee

BY

**Jno. L. Neely, Jr.**

State Highway Department,  
Nashville, Tenn.

State highway construction during 1931 in Tennessee was very limited, amounting principally to construction made possible by Federal aid emergency funds and some maintenance and force

account work carried on by the department. The approximate mileages constructed by types during 1931 are: Pavement, 140 miles; surface treatment, 15 miles; gravel, 292 miles; graded and drained earth, 95 miles. The total expenditure from January 1 to December 1, 1931, including the cost of construction, maintenance, surveys and all other general expenditures from highway funds amounts to \$13,493,000. Operation of the Department during 1932 will be confined to current revenues and it will be possible for us to undertake a very small construction program after the cost of maintenance and other fixed expenditures have been provided.

## \$24,000,000 for Arkansas State Roads in 1932

BY  
**W. W. Zass**

Engineer of Construction,  
Arkansas State Highway Commission,  
Little Rock

Owing to the state of the securities market at the present time in that it is impossible to obtain par for bonds carrying a rate of interest of 5 per cent and as the statutes under which we are operating provide that bonds for state highway purposes cannot be sold at a discount or less than par the situation resolves itself to the fact that any construction program promulgated in the State during 1932 will be entirely dependent upon Federal Aid funds or such emergency funds to match the regular Federal Aid allotment as the Congress sees fit to appropriate.

It appears that the bond market will be unable to adjust itself, at least in time to observe an early start on 1932 work and at the present time we are contemplating only a program sufficient to absorb our 1932 Federal Aid apportionment plus an equal amount of emergency funds. This program involves approximately 100 miles of grading, 200 miles of gravel or crushed stone surfacing, 100 miles of bituminous surface treatment and 100 miles of high type paving. This program is entirely tentative.

Our construction funds for the period 1927 to date have been raised through means of bond issues, the interest payment and maturities of such bond issues to be met through means of a 6-cent gasoline tax and an automobile registration fee. In addition to payments to be made on State Highway bond issues it is necessary to meet obligations on road improvement district bonds promulgated prior to January 1, 1927, which obligations were assumed by the State upon the enactment of the present highway

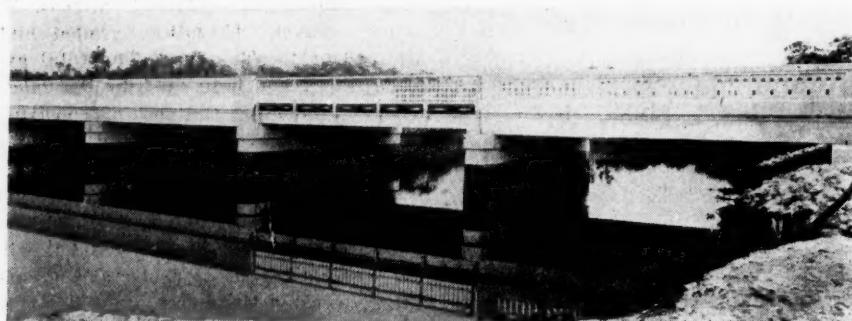
law. The interest and principal on these obligations amount to approximately \$6,500,000 a year during the present period and then will gradually decrease annually until paid out. Obligations of street improvement districts, of routings of State highways through towns and cities of the first and second class have also been assumed by the State. These obligations will probably total about \$500,000 annually at the present time with a prospect of continual increase as improvements are made in the various municipalities.

The present revenue from the gasoline tax and the motor vehicle registration amounts to approximately \$11,000,000 per annum. This entire amount is needed to take care of obligations incurred through the sale of State Highway bonds, road improvement district and street improvement district obligations assumed by the State. Therefore, there is no surplus of funds available for either maintenance or construction on the State Highway System. This condition will be alleviated as our obligations for road improvement district bonds are gradually absorbed.

Our 1931 construction program covered approximately \$9,000,000 worth of road work and \$1,000,000 worth of bridge work, divided as follows:

|   |           |
|---|-----------|
| Grading and minor drainage structures ..... | 200 miles |
| Gravel or crushed stone surfacing .....     | 100 miles |
| Bituminous treatment .....                  | 100 miles |
| High type paving.....                       | 300 miles |
| Bridges: Number of structures...            | 104       |

Our total expenditures for the entire year, covering every phase of the Commission's activities, approximated \$24,000,000.



Middle River Bridge on Federal Aid Road 4 in Florida

## \$12,000,000 Expended on Florida Roads in 1931

BY  
**Robert W. Bentley**

State Road Department of Florida,  
Tallahassee

Road and bridge construction and maintenance funds expended by the State Road Department of Florida during the eleven months ending December 1, 1931, totaled \$11,138,618.96. By December 31 the total reached approximately \$12,000,000.

Of the outgo for eleven months there was expended on construction \$8,544,561.94, and on maintenance \$2,375,740.75.

During 1931 the department has paved 271.64 miles of roads as follows:

| Type                            | Miles  |
|---------------------------------|--------|
| Concrete .....                  | 59.64  |
| Bituminous concrete .....       | .15    |
| Rock-base-surface-treated ..... | 145.85 |
| Sand-clay-surface-treated ..... | 1.30   |
| Macaphalt .....                 | 11.45  |
| Sand-asphalt .....              | 53.25  |
|                                 | 271.64 |

A total of 183.32 miles of roads was graded.

The year saw the construction of 4772 feet of reinforced concrete bridges and 642 feet of wooden bridges. Of these bridge structures, the largest was that spanning Peace river, on State Road No. 5, at Punta Gorda. The bridge structure proper is 4378 feet long, the fills total 1435.28 feet and the total cost was \$962,528.74.

The legislature of 1931 increased the Road Department's income from the tax on gasoline by giving it three cents per gallon instead of two cents as formerly, but took from the department the motor vehicle license tax and the gasoline inspection tax, making a net loss per year of about \$1,500,000. The income of the department in 1932 will probably not exceed \$8,200,000.

During 1931 the Road Department developed a type of pavement which may well be the answer to a very general demand throughout the country for a low-cost road in light-traffic rural sections. This type of pavement, known as "mixed-in-place" sand-asphalt, is being constructed over a long mileage on State Road No. 10, in several of the upper West Florida counties with such success as regards strength and appearance, and at so moderate cost, as to attract the attention of road department officials and engineers of other states and of the United States Bureau of Public Roads. Representatives of various road-building bodies have come into Florida to see this new type of pavement and study its possibilities. The materials used are the sand which constitutes the grade of the road itself, and cut-back asphalt.

## \$14,235,000 Highway Program in Maryland in 1931

BY  
H. D. Williar, Jr.

Chief Engineer, State Roads Commission of Maryland,  
Baltimore

Continuing its program of highway improvements, the State Roads Commission of Maryland in 1931 expended approximately \$14,235,000. New construction included follows:

| Type                 | Miles  |
|----------------------|--------|
| Concrete             | 132.88 |
| Sheet Asphalt        | 3.82   |
| Macadam              | 54.21  |
| Gravel               | 62.58  |
| Concrete Base        | 0.32   |
| Grading and Drainage | 9.73   |

The revenues received for highway purposes in Maryland, for the fiscal year ending September 30, 1931, were as follows:

|                                |                |
|--------------------------------|----------------|
| Maintenance and Reconstruction | \$2,971,446.10 |
| Lateral Roads                  | 2,216,951.01   |
| Lateral, Baltimore City        | 673,053.51     |
| Grade Elimination              | 1,102,121.27   |
| County Bond Issues             | 1,225,983.54   |
| Post Road                      | 2,456,145.59   |
| Commissioner of Motor Vehicles | 2,450,169.83   |
| Miscellaneous                  | 73,742.21      |
| Bridges                        | 1,065,989.41   |

Total ..... \$14,235,582.47

The total net revenue derived during the period from October 1, 1930, to September 30, 1931, from the four-cent per gallon gasoline tax, was \$7,440,331.41, of which amount this Commission received \$6,509,254.51.

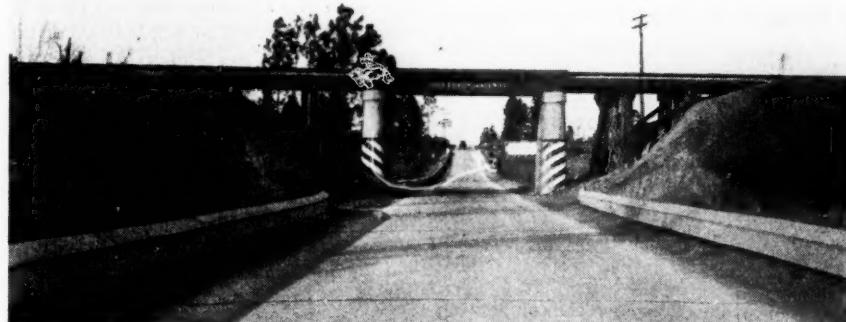
In the maintenance of the State roads system, now amounting to 3500 miles, \$2,103,904.91 was spent in general maintenance, not included in the widening and resurfacing program noted below. About 192 miles of macadam roads were surface-treated, 159 miles of gravel roads were surface-treated, and 73.62 miles of highway were widened by construction of concrete shoulders alongside existing roads, combined with resurfacing.

In the bridge program, 48 contracts for major bridge structures were awarded, covering the construction of 47 projects. These are in addition to numerous smaller bridges on which standard plans are used. Contracts were awarded for 15 grade elimination structures, all on main rail lines. Four existing grade elimination structures were replaced due to increasing highway traffic requirements.

The outstanding bridge project of the year was the construction of a bridge 1016 feet in length, spanning the Nanticoke River at Vienna. This is a reinforced concrete girder type bridge, supported on 90-foot concrete piles, containing 23 bents, a 20-foot clear roadway,

and an 80-foot clear opening double-leaf bascule, costing approximately \$500,000.

In 1931, the Maryland Legislature enacted a Bill Board Law, requiring the State Roads Commission to license all advertisers using bill boards and to issue permits for individual bill boards or



An Underpass on a South Carolina State Highway

## Mississippi's Highway Situation

BY  
Brown Williams\*

Chairman  
State Highway Commission,  
Jackson, Miss.

A study of the highway situation in Mississippi after the present highway commission assumed office in July, 1930, disclosed that no financing for construction had been provided by the highway law passed at the preceding legislature. The tax of 2½ cents per gallon on gasoline was found to barely suffice for maintenance and support of the general offices.

Federal aid had previously been suspended, but in October in view of the disastrous failure of crops and of the serious unemployment situation, the Bureau of Public Roads released a small amount of Federal aid in those counties

\*Extracts from article by Mr. Williams reviewing year's activity, which was published by the Highway Department.

other advertising signs. In accordance with the provisions of this law, the Commission has licensed 7956 signs located within 500 feet of State roads, and with its own forces, has removed from the same area 21,250 illegal signs. The law under which this work has been done, provides that any excess of revenue over expenditures is to be applied to roadside beautification.

Roadside beautification, during 1931, has been forwarded by the planting of 20 miles of shade trees suitable to the soil conditions along the various roads. These trees are planted in cooperation with the Maryland Department of Forestry and the Federated Garden Clubs of Maryland.

Based on present prospects, there will be available approximately \$12,400,000 for the 1932 highway program.

that had funds available for this use. This allowed award of contracts in seven counties approximating \$1,000,000.

Funds were then made available through passage of the Emergency Employment Highway bill by Congress in December, 1930. A program involving relocations, bridges and paving was decided upon. With an organization expanded as rapidly as possible contracts were let for about 35 projects aggregating 200 miles. These projects are all practically completed.

The various kinds of construction involved and the amounts expended were:

Clearing and grubbing, \$36,226;  
Grading, 3,504,786 cubic yards, \$800,000;  
Culvert pipe, 14,091 lineal feet of 18-inch, \$23,478;  
Concrete box culverts, 13,824 cubic yards, \$231,175;  
Reinforcing steel, 1,448,220 pounds, \$51,190;  
Bridges, 14,558 lineal feet, \$815,953;  
Concrete paving, including subgrade treatment and reinforcing, 42 miles of 20-foot roadway, \$849,000;  
Elimination of 17 grade crossings.

Total of the contracts awarded under the emergency program was \$2,868,000.

As no construction funds have been provided, the Mississippi State Highway Department has no program outlined for 1932.



**Macasphalt on Rock Base Highway in Florida**

Section of the Lakeland-Auburndale Road in Polk County, Florida, known as Federal Aid Road 17, with a surfaced width of 20 feet. Note the wide, carefully maintained shoulders that facilitate driving with safety and permit parking off the pavement

## \$25,000,000 Expended for Roads in South Carolina

BY

**Charles H. Moorefield**

State Highway Engineer,  
State Highway Department,  
Columbia, S. C.

The fiscal year ending September 30, 1931, stands out as the most active year in the history of road building in South Carolina. During the year contracts were awarded for additional construction work estimated to cost approximately \$20,000,000. This represents approximately 500 miles of standard paving, 400 miles of bituminous surfacing, a number of miles of grading and earth type roads, and the necessary bridge work.

During the year actual construction completed was 674 miles of standard paving, 220 miles of bituminous surfacing, and a number of miles of earth type roads and bridges. The actual expenditures for construction during this period were \$24,029,478.40.

The status of the State Highway System as of September 30 was as follows:

|   | Mileage |
|---|---------|
| Standard paving completed...              | 2,114.3 |
| Bituminous surfacing completed .....      | 579.6   |
| Improved earth types completed .....      | 1,837.7 |
|   | <hr/>   |
| Standard paving under contract .....      | 236.8   |
| Bituminous surfacing under contract ..... | 351.9   |
| Earth types under contract...             | 242.7   |
|   | <hr/>   |
| Unimproved .....                          | 831.4   |
| Total .....                               | 628.7   |
|   | <hr/>   |
|   | 5,991.7 |

A definite construction program for the fiscal year ending September 30, 1932, is not available at this time. The 1929 Highway Bond Act, under which

the Department is now operating, provides for the issuance of bonds or certificates of indebtedness, not to exceed the sum of \$65,000,000 or \$20,000,000 in any one year. On September 30 only \$25,000,000 had actually been realized from this source. This \$25,000,000, together with Federal Aid and other funds, has enabled the Department to award contracts for approximately \$38,000,000. Of the work covered by these contracts there remained uncompleted on September 30 approximately 237 miles of standard paving and 352 miles of bituminous surfacing. The unpaid balance on outstanding contracts was approximately \$10,500,000.

It is hoped that the State will be able to sell additional bonds sufficient for the Department to undertake a program of approximately \$20,000,000 including the uncompleted portion of active contracts, or additional contracts totaling approximately \$9,500,000.

The expenditures of the Department for maintenance during the fiscal year ending September 30, 1931, were \$2,252,017.54.

### Surface Treatment on Gravel Base

A new road in St. Tammany Parish, Louisiana, with modern-type guard rail



## \$17,500,000 for Virginia Highways in 1932

BY

**H. G. Shirley**

Commissioner,  
State Department of Highways,  
Richmond, Va.

Construction for the calendar year included: Concrete, 52 miles; bituminous macadam and asphalt, 47; macadam surface treated, 230; gravel and soil surface treated, 304; graded, 43; 676 miles of road oiled.

Total expenditure for construction is \$11,922,000, while maintenance work involved the expenditure of approximately \$6,000,000. The program also included 75 bridges at a cost of \$930,000.

The Legislature has not made an appropriation for the fiscal year 1932 but there will be approximately \$11,500,000 for construction and \$6,000,000 for maintenance.

## Oklahoma Improved 1200 Miles of Roads in 1931

BY

**L. C. Bernard**

State Highway Department,  
Oklahoma City, Okla.

The State of Oklahoma constructed during 1931 a total of 212.14 miles of concrete pavement; 194.19 miles of gravel; 422.21 miles of oiled gravel and 393.55 miles of grade and drainage, approximately 100 projects.

Although the 1932 road program has not yet been definitely determined, it will approximate 1931 construction.

## Louisiana Pushes \$75,000,000 Program

BY

**Harry B. Henderlite**State Highway Engineer,  
Baton Rouge, La.

The 1930 Legislature enacted legislation having a very important bearing upon the state highway system and the activities of the State Highway Commission. Approximately 1000 miles of proposed roads of a secondary class were added to the system so that now there is under the jurisdiction of the Commission about 17,000 miles of roads. The Legislature also authorized the issue and sale of bonds, not to exceed \$75,000,000, for hard surfaced highways and necessary bridges. This bond statute was ratified by the voters in November, 1930. During the interval between the enactment by the Legislature in June, 1930, and the ratification of the act by the electors in November, surveys and plans were under way for a comprehensive system of hard surfaced highways. The Commission began to take bids for the construction of this system in January, 1931, and work was well under way in February. To date there have been constructed over 1000 miles of standard 8-6-8, 18-foot concrete pavement, together with necessary drainage structures, 31 bridges sufficiently large to be handled as separate contracts, over 600 miles of intermediate type asphaltic pavements, and over 500 miles of grading and drainage structure projects. Approximately 300 miles of this will be hard surfaced in 1932.

A substantial part of some of the projects for which contracts were awarded late in the summer could not be completed in 1931 and will carry over into 1932. In addition to this carry-over many new contracts will be let.

Attention is invited to the number and size of bridge projects necessary in the

State of Louisiana because of the several large rivers and innumerable bayous. A table herewith shows the location, length, and cost of bridges now under construction. The bridges at Morgan City and Krotz Springs are particularly interesting as the Atchafalaya River, which flows in one direction when the Mississippi River is in flood and another during its normal stage, is a very treacherous stream and the river piers are to be carried 140 feet below low water.

Bids were taken last year for a bridge over the Mississippi River at New Orleans to cost approximately \$14,000,000, and it is expected that bids will be taken in 1932 for a bridge over the Mississippi River at Baton Rouge to cost approximately \$9,000,000, and for a bridge across the Bonnet Carre Spillway, on the highway between Baton Rouge and New Orleans, estimated to cost \$1,200,000.

The 1931 highway program has been very satisfactory from every point of view: Highways and bridges have been constructed economically, thousands of people who otherwise would have no means of livelihood during the depression have been employed, and the State has secured a well located system of highways in preparation for an intensive development of its many and varied natural resources when the present period of depression has passed.

### SUMMARY OF LOUISIANA ROAD-BUILDING

|  | Com-   | Old Contracts | New       |
|--|--------|---------------|-----------|
|  | pleted | Carrying Over | Contracts |
|  | 1931   | to 1932       | in 1932   |
| Grading, miles .....                           | 538    | 273           | 100       |
| Gravel or Shell Surfaced Roads, miles.....     | 1,027  | 528           | 2,500     |
| Asphalt Pavement, miles.....                   | 612    | 281           | 200       |
| Concrete Pavement, miles.....                  | 1,067  | 316           | 300       |
| Bridges and Drainage Structures, projects..... | 31     | 31            | 14        |

### LOUISIANA BRIDGES IN COURSE OF CONSTRUCTION

| Project | Location                                | Length    | Cost           |
|---------|---|-----------|----------------|
| 6004    | Atchafalaya River at Morgan City.....   | 3505 feet | \$1,159,097.89 |
| 4800    | Atchafalaya River at Krotz Springs..... | 2784 "    | 966,060.50     |
| 1801    | Red River at Shreveport.....            | 2804 "    | 790,495.88     |
| 2400    | Black River at Jonesville.....          | 2210 "    | 581,903.76     |
| 4804    | Ouachita River at Moncla.....           | 1154 "    | 534,393.83     |
| 4905    | Red River at Alexandria.....            | 1920 "    | 483,199.75     |
| 5004    | Red River at Coushatta .....            | 1724 "    | 453,505.25     |
| 1402    | Red River at Moncla .....               | 1183 "    | 327,323.24     |
| 4504    | Industrial Canal at Gentilly.....       | 404 "     | 305,228.00     |
| 2200    | Ouachita River at Harrisonburg.....     | 1100 "    | 302,085.57     |
| 6500    | Ouachita River at Sterlington.....      | 925 "     | 251,859.96     |
| 2600    | Amite River at Denham Springs.....      | 1990 "    | 192,348.66     |
| 6804    | Bogue Chitto River at Franklin.....     | 2172 "    | 162,796.96     |
| 6600    | Mermenau River at Lake Arthur.....      | 1258 "    | 147,539.55     |
| 6209    | Tangipahoa River at Amite.....          | 2247 "    | 137,195.01     |
| 673-C   | Calcasieu River at Kinder.....          | 1638 "    | 134,731.55     |
| 3607    | Caminada Bay (creosoted trestle).....   | 3800 "    | 110,105.34     |
| 186-B   | Bayou Louis .....                       |           | 95,201.66      |
| 4907    | Willow Glen O'head.....                 |           | 93,303.23      |
| 180-D   | Tensas River .....                      |           | 90,856.45      |
| 3602    | Hanson City O'head.....                 |           | 88,290.70      |
| 190B2   | Boeuf River .....                       |           | 87,437.29      |
| 3806    | Bayou Lafourche .....                   |           | 77,762.96      |
| 677-B   | Bayou Blenvue .....                     |           | 63,044.71      |
| 3701    | Vermilion River .....                   |           | 60,748.03      |
| 4411    | Cane River .....                        |           | 56,524.74      |
| 1803    | Bayou Macon .....                       |           | 54,192.24      |
| 4801    | Bayou Grosse Tete .....                 |           | 48,317.17      |
| 1404    | T. & P. R. R. ....                      |           | 23,632.78      |
| 3403    | Jonesboro O'head .....                  |           | 21,726.93      |



A Concrete Highway Bridge Recently Completed at Elizabeth City, N. C.

This modern structure spanning the Pasquotank River is 630 feet long, and has a 154-foot double leaf bascule span, providing a clear opening of 100 feet. It consists of reinforced concrete girders on precast reinforced concrete bents.



Nanticoke River Bridge at Vienna, Md., Completed Last Year

The \$500,000 structure connects Dorchester and Wicomico counties, having been constructed by the State Roads Commission. It is 1016 feet long with a 20-foot roadway.

## Texas Expenditure Over \$30,000,000 Annually on State Road System

BY

**Gibb Gilchrist**

State Highway Engineer,  
Austin, Texas

Information based on the last fiscal year ending August 31, 1931. Construction contracts let for grading and small structures aggregate 1289.96 miles costing \$7,562,027.95; gravel, caliche, and macadam, 37.18 miles costing \$200,554.04; bituminous on all bases, 327.41 miles costing \$2,797,124.80; rock asphalt on all bases, 82.83 miles costing \$1,038,730.30; concrete, 762.91 miles costing \$16,410,829.75. Bridges costing \$3,986,675.52; a grand total of construction contracts let of 2500.29 miles estimated to cost \$32,025,942.36.

Construction contracts completed: Grading and structures, 1106.13 miles costing \$9,790,768.65; gravel, shell and macadam, 86.64 miles costing \$608,500.40; bituminous on all bases, 180.39 miles costing \$1,803,959.07; rock asphalt, 95.15 miles costing \$1,331,925.89; concrete, 466.51 miles costing \$11,618,731.16; brick, 2.63 miles costing \$139,877.90; bridges costing \$4,256,327.31; total mileage, 1934.45 costing \$29,550,090.38.

Projects under construction on August 31, 1931, follow: Grading and structures, 1082.61 miles costing \$7,109,287.84; caliche and macadam, 22 miles costing \$158,126.32; bituminous, 142.05 miles costing \$1,154,262.75; rock asphalt, 152.16 miles costing \$1,567,495.19; concrete, 614.78 costing \$11,976,133.50; bridges, costing \$3,881,939.26; grand total, 2013.60 miles estimated cost of \$25,847,244.86.

It is estimated that approximately the same amount of contracts will be let for the coming year. There have been no changes enacted by legislature. Mileage maintained by State highway department as of August 31, 1931: Unimproved,

4911.99 miles; grading and small structures, 2569.95 miles; sand, gravel, caliche, macadam, etc., 2704.60 miles; bituminous on all bases, 4069.09 miles; rock asphalt on all bases, 1728.06 miles; concrete, 2581.09 miles; brick, 59.14 miles; oil mix, 163.91 miles. Net receipts to State highway fund for fiscal year ending August 31, 1931: Net license fees, \$4,440,928.27; gasoline tax, \$22,958,842.19; county aid, \$11,091,740.19; Federal aid receipts, \$8,959,312.39; emergency Federal aid receipts, \$3,034,750.60; depository interest, etc., \$397,032.96. Expenditures: Maintenance, \$10,329,872.32; construction, \$30,371,905.20; equipment purchases, \$397,426.51; legislative appropriations, supplies, state highway patrol, etc., \$1,064,602.90.

## Kentucky's Big Road and Bridge Program

BY

**Ben Johnson**

Chairman, State Highway Department,  
Frankfort, Ky.

In the period from April 1, 1930, to November 1, 1931, the State Highway Department of Kentucky executed con-

tracts calling for the building of 1560 miles of highways costing \$18,876,000. The mileage by types and the contract amounts for the period are as follows:

| Type                                     | Miles   | Contract Amount |
|--|---------|-----------------|
| Grade and drain.....                     | 589.590 | \$5,129,953.90  |
| Traffic Bound Macadam                    | 378.344 | 2,731,278.96    |
| Gravel.....                              | 105.355 | 398,387.88      |
| Water Bound Macadam                      | 9.284   | 97,308.26       |
| Surface Mix Treatment                    | 52.571  | 653,093.00      |
| Amesite .....                            | .646    | 11,304.35       |
| Rock Asphalt.....                        | 122.480 | 2,585,295.75    |
| Reinforced Concrete                      |         |                 |
| Paving .....                             | 302.332 | 6,209,933.23    |
| Bridges b y separate contract (33) ..... |         | 1,050,901.51    |
|  |         | 1,560.602       |
|  |         | \$18,876,456.84 |

Toll Bridges—The toll bridge program now under way includes ten bridges constructed entirely by the State Highway Commission of Kentucky and one constructed jointly by Kentucky and Indiana. Following is a list of these bridges:

| Bridge                                 | Contract Price<br>Sub. and Super. | Date<br>Opened |
|--|-----------------------------------|----------------|
| Ashland—Ohio River Bridge.....         | \$579,450.00                      | Aug. 10, 1931  |
| Maysville—Ohio River Bridge.....       | 1,196,809.00                      | Nov. 25, 1931  |
| Burnside—Cumberland River Bridge.....  | 190,656.47                        | Nov. 12, 1931  |
| Smithland—Cumberland River Bridge..... | 360,332.00                        | Nov. 28, 1931  |
| Boonesboro—Kentucky River Bridge.....  | 175,696.74                        | Nov. 11, 1931  |
| Spottsville—Green River Bridge.....    | 186,907.23                        | Dec. 17, 1931  |

| *Henderson-Evansville—Ohio River Bridge..... | 1,582,995.00 | Approx. Date<br>of Opening |
|--|--------------|----------------------------|
| Canton—Cumberland River Bridge.....          | 373,160.52   | No date set                |
| Eggner's Ferry—Tennessee River Bridge.....   | 535,642.82   | Jan. 1, 1932               |
| Paducah—Tennessee River Bridge.....          | 544,634.00   | Mar. 1, 1932               |
| Tyrone—Kentucky River Bridge.....            | 297,367.04   | No date set                |
|  |              | Mar. 1, 1932               |

\*Constructed jointly with Indiana.

On April 1, 1930, the commission was maintaining a mileage of 4477, while on November 1, 1931, this had been increased to cover 5277 miles, a gain of 800 miles.

The mileage of state maintained roads is as follows:

| Types  | November 1,<br>1931 |
|--|---------------------|
| Grade and drain.....                           | 430.405             |
| Gravel .....                                   | 1120.957            |
| Traffic bound macadam.....                     | 1230.700            |
| Traffic bound macadam surface<br>treated ..... | 10.533              |
| Retread or surface mix.....                    | 260.144             |
| Waterbound macadam .....                       | 11.909              |
| Waterbound macadam surface<br>treated .....    | 1120.254            |
| Bituminous macadam .....                       | 196.498             |
| Rock asphalt .....                             | 280.500             |
| Bituminous concrete .....                      | 20.978              |
| Reinforced concrete .....                      | 590.304             |
| Brick .....                                    | 4.527               |
|  | 5277.700            |

From April 1, 1930, to November 1, 1931, the total receipts by the Commission amounted to \$28,180,791, of which \$13,669,802 represents gasoline tax funds, \$6,223,427 Federal aid, \$3,590,428 motor license taxes and \$2,069,213 county aid for construction and \$428,413 county aid for maintenance and reconstruction, along with lesser miscellaneous amounts.

## Alabama to Build 300 Miles

BY

L. M. Dinsmore

Office Engineer, State Highway Commission,  
Montgomery, Ala.

Alabama during 1931 completed on the State highway system 238 miles of pavement, and 313 miles of gravel, sand-clay and graded roads. Seven thousand five hundred fifty lineal feet of reinforced concrete and treated timber bridges were also completed during the past year. All of above is State work on the State system.

The program for constructing 15 State-owned toll bridges over the larger rivers was completed and all were opened to traffic during 1931. This bridge program involved an expenditure of approximately \$5,000,000 to complete. The Highway Department has in excess of 5000 miles of road under maintenance at the present time.

The construction and maintenance program for 1932 is indefinite at the present time on account of small amount of funds now available for construction. Additional funds would have to be authorized by the Legislature. If no additional funds are authorized by the Legislature or Congress our program will probably be confined to the construction of approximately 300 miles of road of all types.

## \$35,000,000 Annually for State Road

### Construction in Missouri

BY

T. H. Cutler

Chief Engineer, State Highway Department,  
Jefferson City, Mo.

The Missouri state road program, as now enlarged, includes the following groups or systems of roads:

|   | Miles    | Cost          |
|---|----------|---------------|
| Primary system .....                      | 1,601.1  | \$73,857,317  |
| Secondary system .....                    | 5,877.0  | 138,960,477   |
| Additional state roads..                  | 303.8    | 6,757,780     |
| Park connections .....                    | 91.4     | 1,455,152     |
| Traffic relief roads.....                 | 332.5    | 16,830,311    |
| Supplementary state<br>roads, about ..... | 7,000.0  | 40,000,000    |
| Grand total .....                         | 15,206.8 | \$277,861,037 |

The primary group of state roads is now practically completed. The secondary group is about 70 per cent completed. It is expected that the entire program, as outlined in the table, will be completed by 1937; after which the extension of the "farm to market" system can be carried on at the discretion of the Highway Commission.

The various activities relating to the construction and maintenance of roads are carried on in detail by bureau chiefs reporting to the chief engineer. The State is divided into 10 districts or divisions, each in charge of a division engineer who reports according to the nature of the matter in question to one or more of the bureau chiefs.

The funds for carrying on this work

come primarily from the automobile license fees and gasoline tax, federal aid, plus small amounts of incidental revenues. It is true that road bond issues have been authorized and have been made use of to the extent of \$105,500,000, but in the end the principal and interest on these bonds are paid out of automobile license fees, so the motor vehicle owners really carry the burden.

We are spending approximately \$30,000,000 a year for construction and \$4,500,000 to \$5,000,000 a year for maintenance. This will continue until the end of 1933 at which time all of our authorized road bonds will have been sold and after which we will proceed on current revenues averaging about \$2,000,000 a year.

The program for 1932 is best represented by the following table:

| Type  | Miles     | Total Cost   |
|---|-----------|--------------|
| Graded earth and bridges                        | 72.940    | \$464,461    |
| Graded earth, bridges,<br>gravel surf. ....     | 1,796.603 | 16,857,142   |
| Oil or gravel surfacing.                        | 237.726   | 617,772      |
| Graded earth, bridges,<br>concrete paving ..... | 235.693   | 9,058,893    |
| Concrete paving .....                           | 142.310   | 3,411,082    |
| Bituminous surface .....                        | 3.680     | 40,805       |
| Bridges .....                                   | .....     | 328,317      |
| All types .....                                 | 2,488.952 | \$30,778,472 |



Bituminous Macadam Highway in West Virginia

A considerable mileage of this type of road has been constructed in West Virginia. The picture shows a section of State Route 29 in Morgan County



A 20-Foot Concrete Road With Raised Curb in Georgia

## County Highways Under State Control in North Carolina

BY  
**E. B. Jeffress**

Chairman, State Highway Commission,  
Raleigh, N. C.

A total of \$8,398,148 expended during the year ending December 1, 1931, by the North Carolina State Highway Commission was divided as follows:

|  |
|--|
| 92.96 miles of grading at a cost of \$601,048.52                         |
| Top soil or gravel was laid on 108.36 miles at a cost of..... 506,622.55 |
| Concrete paving was laid on 163.03 miles at a cost of..... 3,307,215.44  |
| Concrete shoulder widenings on 40.68 miles at a cost of..... 273,442.43  |
| Asphalted concrete was laid on 22.71 miles, costing..... 368,110.27      |
| Sand asphalt was laid on 107.50 miles at a cost of..... 1,479,336.65     |
| Sand asphalt was laid on 51.54 miles at a cost of..... 317,491.05        |
| Crushed stone surfacing on 12.14 miles at a cost of..... 69,162.00       |
| Structures cost a total of..... 1,385,739.51                             |

With special attention being shown the seven per cent Federal aid system of 4200 miles, this work is now practically completed and when finally approved will permit extension of Federal aid to additional mileage.

For 1932 the outlay will be approximately from \$3,000,000 to \$4,000,000, \$400,000 of which will probably go for bridge work and the balance for grading and surfacing. The 1931 Road Law made paramount the maintenance of state and county highways. From the \$21,000,000 revenue, \$8,000,000 is set aside for interest and bond retirement and sinking fund requirements, \$4,000,000 for state highway maintenance and a minimum of \$6,000,000 for county road maintenance, the surplus going into the fund for use in matching Federal aid.

Radically reorganizing the highway system of North Carolina, the Road Law of 1931 required that the 47,000 miles of county roads be taken over by the State

Highway Commission, which gave that new organization of a chairman and six commissioners control over 57,000 miles of roads including the 10,000 miles already in the state system. All county convicts serving terms of 60 or more days were also transferred to the Highway Commission, which now has 4200 men in the various prison camps throughout the state.

Construction of state highways under contract was concentrated under a State Construction Engineer, so that the division and district organizations could devote their entire time to maintenance. Each of the five divisions were equipped with two complete outfits for building

oil-treated, or tar and gravel roads, for construction of which approximately \$1,000,000 was spent during 1931. Additional equipment for handling the county roads was purchased at a cost of \$800,000, as much of the county equipment taken over was obsolete and many of the counties did not have adequate facilities. Appraised value of the county equipment taken over was \$1,000,000. Several division and district machine shops were established throughout the state.

The taking over of the county prisoners necessitated leasing from the counties of the existing prison camps and in addition embarkation upon a camp construction program involving \$400,000 to continue into 1932. A standard design of camp has been developed. When the program is completed North Carolina prisoners will have the benefit of modern type quarters and sanitary facilities.

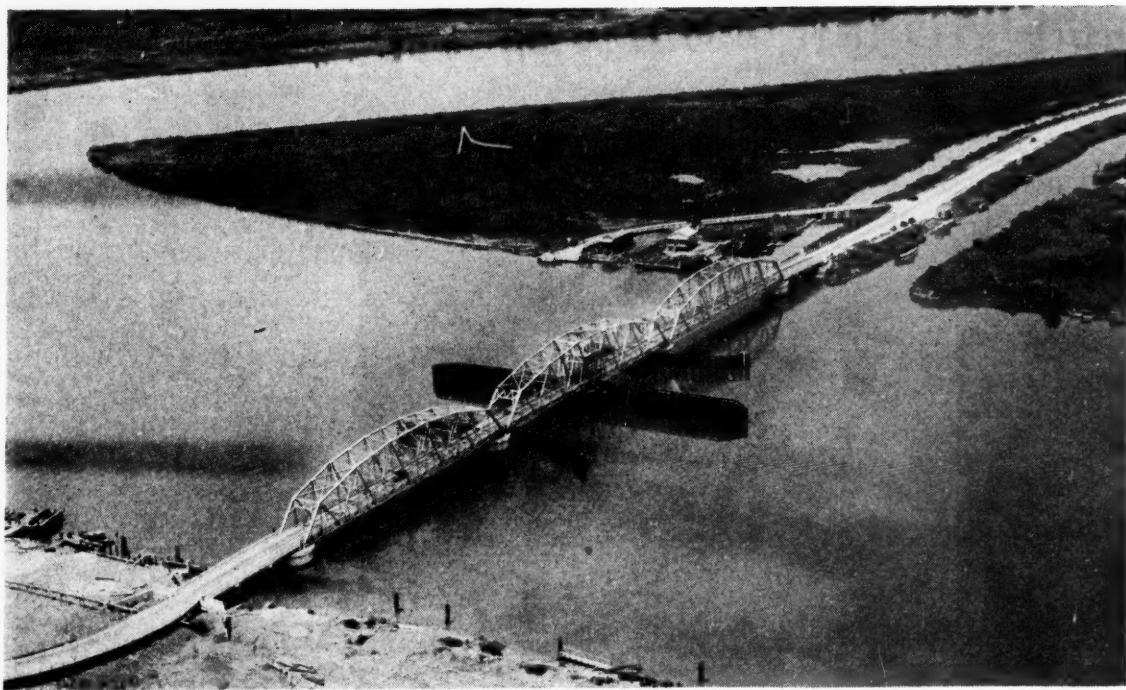
In addition to the change in the State Highway organization, the General Assembly increased the gasoline tax on July 1 from five to six cents per gallon. Revenue so far has come up to estimates. In fact, a slight increase in gasoline consumed has been noted during the past six months. North Carolina counties are prohibited from levying taxes for road work, or from contracting any debts for such work.

The State Highway System of North Carolina on July 1 represented an investment of \$184,449,000 since the program was started in 1921. Of this \$115,000,000 was derived from bond issues; \$26,000,000 from Federal aid; \$11,949,000 from county donations and railroad contributions; \$4,500,000 from county loans, and \$27,000,000 from transfer of surplus revenues. The counties, as represented by county and township bonds outstanding on that date, have expended more than \$100,000,000. The total investment in state and county roads, excluding streets in incorporated cities and towns, is therefore more than \$284,000,000.



A Roadside Drinking Fountain in West Virginia

This state has pioneered in erecting attractively designed fountains after the State Health Department has tested the water. The one shown here is in Hancock County on U. S. Route 30



Chef Menteur Bridge Completed in Louisiana at Cost of \$600,000

## Over \$13,000,000 for West Virginia Road Work This Year

BY

**C. P. Fortney**

Chairman, State Road Commission of West Virginia,  
Charleston

West Virginia in 1931 improved a total of 780.75 miles of State roads, and 45 bridges of greater than 20-foot span. The sum paid out for construction during the year was \$12,975,355.22.

The State had under maintenance during the year 3539 miles. Maintenance expenditures, including the cost of improvements and betterments, totaled \$3,041,166.40.

For 1932, West Virginia will have available for new contracts \$6,000,000. There will also be paid out, on construction now under contract, some \$4,300,000, and for maintenance approximately \$3,000,000.

Construction completed in 1931 was made up of the following mileages by types:

Graded earth, 122.10; gravel and stone, 69.69; bituminous treated gravel and stone, 217.84; bituminous macadam, 174.53; rock asphalt, 4.49; bituminous concrete, 2.76; concrete, 129.14; brick, 0.93; shale, 49.49; stone base, 0.78.

Mileages by types for 1932 have not yet been decided upon, but the program will include both grading and paving, with paving predominating.

The State is carrying over into 1932 the following mileages under construction: Graded earth, 136.41; concrete, 17.34; stone base, 66.39. Four bridges of greater than 20-foot span are also being carried over.

The West Virginia Legislature, at its 1931 session, authorized the reissue and sale of \$10,000,000 of State road bonds. The permissible speed limit of automobiles on open country highways was increased to 45 miles an hour, the previous limit having been 35. The 45-mile rate, however, is subject to the proviso that no person shall drive at a speed greater than is reasonable and prudent, having regard to the traffic and all other existing conditions. It was made unlawful to drive at such a slow speed as to impede or block the normal and reasonable movement of traffic except when reduced speed is necessary.

In order to provide employment for as many men as possible, the State Road Commission required all successful bidders to place the full number of outfits called for on the work at once, and to employ the largest number of men who

could be worked to advantage. Employment preference was required for men residing in the vicinity of a project, and in so far as practicable, for hand labor. West Virginia took full advantage of its share of emergency Federal Aid.

## \$16,000,000 for Georgia Roads in 1932

BY

**J. W. Barnett**

Chairman, State Highway Board,  
Atlanta, Ga.

The State Highway Board of Georgia has completed during the past year the following mileage of highways of various types: Two hundred seventy nine miles of concrete; 174 miles of limerock with surface treatment; 2½ miles of brick on concrete base; 25 miles of cold mix surfacing; 27 miles of sand-asphalt; 31 miles of sheet asphalt; 29 miles of penetration macadam; 7 miles of surface treated macadam; 59 miles of gravel and chert; 546 miles of grading; 59 miles of resurfacing and 148 bridges.

Surveys have been made for approximately 2500 miles of highways in all parts of the state.

While no definite program has been outlined as yet for 1932, the funds available for the next 18 months' period total approximately \$16,000,000.

## Build Helium Compressors at Birmingham



A Mobile Helium Gas Compression Unit

Mounted on a standard gauge railway car this unit may be moved to any point where recovery of helium is desired

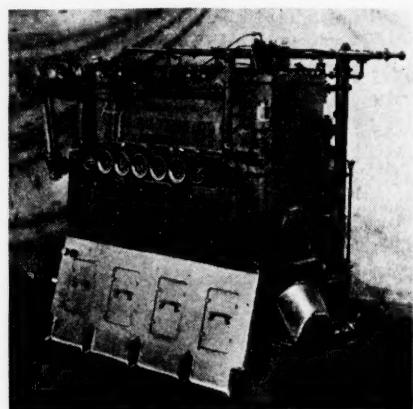
Two of the largest high pressure helium compressors ever built, designed and constructed in the plant of the Hardie-Tynes Manufacturing Co., Birmingham, Ala., will be used by the United States Navy, unit of aeronautics. One is built into a railroad car and is to be used at various helium serving stations, principally at Amarillo, Texas. The machine may be removed as a unit in case of emergency.

One machine will be mounted on a permanent foundation at the Naval Air Station, Lakehurst, N. J. Should the Los Angeles or Akron, the big dirigible, be wrecked, the mobile unit will be

rushed to the nearest point and the unit removed from the car to the dirigible to salvage the gas. The Akron has 12 gas bags containing 12,000,000 cubic feet of helium, about \$420,000 worth. The United States is the only country in the world with an appreciable supply of this gas which has all the advantages of hydrogen, used previously, without the extreme danger of being inflammable.

The helium compressors have four-stage compression. When operating at 2500 pounds pressure, each will deliver 15,139 cubic feet of helium an hour; at 750 pounds pressure, each will deliver 20,160 cubic feet of gas an hour.

Each compressor is driven by a 200-horsepower Westinghouse motor with speed of 720 r. p. m., the drive consisting of 15 V-belts. Change in compressor speed is obtained by the use of two dif-



Part of the Gas-Compressing Unit

ferent diameter pulleys on motor shaft, a special arrangement providing for quick change of pulleys.

## 17-STORY ST. LOUIS BUILDING

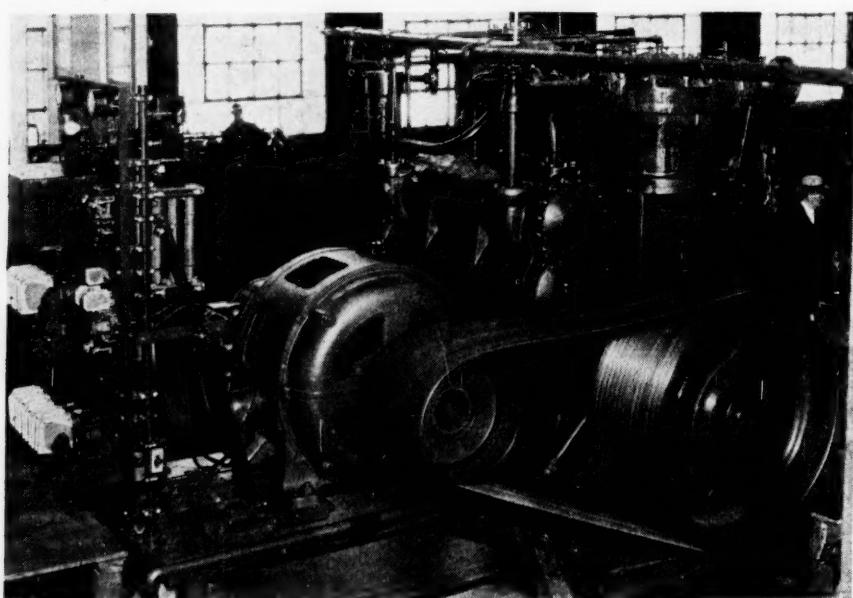
Sisters of Mercy to Erect Business

Women's Home—\$250,000 Clinic

Also Planned

St. Louis, Mo.—Plans have been announced by the Sisters of Mercy for the construction this year of a 17-story business women's home at Lindell boulevard and Sarah street, and the immediate erection of a \$250,000 clinic in conjunction with St. John's Hospital, which is conducted by the order. The home will occupy a site 253 by 213 feet, fronting 193 feet on Lindell boulevard, with a depth of 180 feet. A tower unit will be about 100 by 50 feet and wings approximately 50 by 183 feet. A chapel in the rear will be 50 by 100 feet.

The structure will embrace four units, the 17-story tower to provide living quarters for 200 sisters of the order who come to St. Louis to study nursing in the hospitals. On the east and west of the tower there will be 7-story wings connected to the center structure by



High Pressure Helium Compressor for Aeronautics Unit of United States Navy

bridges of about 7 stories. The eastern wing will contain living quarters for 200 business women, and the western wing living quarters for the same number of women who have retired from active life. A T-shaped, 3-story chapel to accommodate 600 people, will be erected in the rear of the tower and will be connected with it.

Dining and recreational facilities will be provided, the recreation rooms to be on the ground floor of the tower section. Street entrances will be provided for the tower and each wing, and each will be equipped with elevators, of which there will be four. A large lobby on the ground floor of the center section will be reached by the Lindell Boulevard entrance which will be at street level. The building will be of modern design, with set-back effects in the upper stories, having an exterior of stone for the first three stories and brick above. George D. Barnett, Inc., St. Louis, is the architect and Mother Ignatius is directing the planning of the structure.

Plans are also being prepared by the same architect for a 4-story clinic building to be erected west of St. John's Hospital on the south side of Park View Place, and construction is expected to begin at once. It will be connected with the hospital by a 2-story bridge. The structure will replace the present ell in the Mercy Home, and will have a frontage of 135 feet on Park View place with a depth of 100 feet. It will be L-shaped, the base of the letter being at the western end. The first and top floors will be of stone and the two intermediate floors of brick. Clinics will be provided for surgery, pediatrics, medicine, orthopedics, ear, nose, throat and eye work. Mother Aloysius is in charge of construction.

#### Plan \$300,000 Pipe Line

Tulsa, Okla.—The Gulf Pipe Line Company of Oklahoma, with offices here, a subsidiary of the Gulf Oil Corporation, Pittsburgh, Pa., plans the construction of a 45-mile pipe line from Henryetta station in South Okmulgee County to Perryman station in southern Tulsa County, which is the starting point of the line of the Gulf Pipe Line Company of Pennsylvania to three refineries in Ohio and Pennsylvania. The new line, to be about 45 miles long, will parallel two similar 8-inch lines taking crude oil from Greater Seminole Field to the Perryman station tank farm, and will increase this movement by 20,000 barrels daily. Pipe for the line has already been fabricated, it is announced, and ditching is starting. The cost of the project will exceed \$300,000.

## Let's Ride Out of the Valley

By BENNETT CHAPPLE, Vice-President, The American Rolling Mill Co., Middletown, Ohio.\*

**W**ITH the turn of the year we are all hopeful of better business, and many eyes are focused on the automobile industry as the "bell-wether" to lead business back into the channels of prosperous times.

The automobile is not a luxury, it is a necessity. It has made it possible for us to live in more congenial surroundings, away from crowded districts. It has given breadth to life, and expanded the horizon for individuals and families alike.

This month will see the great automobile shows teeming with crowds to view the industry's new models, tempting in new line and color. Never in the history of the automotive industry has there been so much value offered at so little cost. Never have automotive geniuses applied themselves to the creation of physical comfort and perfected mechanism with greater success.

The automobile — the Goddess of Transportation—with its flowing robes of lacquered beauty, beckons the world to a returning prosperity. In her lies

|     |  |
|-----|--|
| 40% | of all the sheet steel produced in the United States |
| 80% | of all the gasoline                                  |
| 84% | of all the rubber                                    |
| 73% | of all the plate glass                               |
| 26% | of all the nickel                                    |
| 31% | of all the lead                                      |
| 58% | of all the upholstery materials                      |
| 17% | of all the hardwood lumber                           |
| 37% | of all the aluminum                                  |
| 15% | of all the copper                                    |
| 23% | of all the tin                                       |
| 15% | of all the cotton                                    |

If we convert such figures into man-hours of labor, we quickly get a realization of the tremendous influence of automobile sales in the prosperity of the Nation.

It is natural for mankind to resist the inroads of depression with general curtailment of buying, even to the point where earning power is seriously checked and reservoirs of savings are being depleted. When extreme thrift goes so far as to sap the vitality of universal earnings, it becomes a boomerang.

The best investment any man can make, who can do it, is to buy that new automobile. Remember, when you buy your new automobile, you start a tremendous cycle of man-hours of labor in

\*A message which was broadcast January 4 by Mr. Chapple on the Armclo Iron Master Program from WLW, Cincinnati.

many of the basic industries of America.

Let's face the economic situation with a new faith, that if every one who needs and can buy a new automobile, a new radio, a new refrigerator, or a new anything, and will do so, the increased prosperity from such a concerted movement will more than pay each one of us individually for that purchase and it will place us well on the road to business recovery.

So, let's use the marvelous, modern automobile to ride out of the valley of depression on to the broad highway of better times.

#### Tennessee Marble for Supreme Court Building

Washington, D. C.—The Gray Knox Marble Company, Knoxville, Tenn., has been awarded contract for approximately \$1,500,000 worth of marble for the new Supreme Court Building here, for which the general construction contract was recently awarded to the George A. Fuller Co., Washington, at \$8,333,000. Marble to be furnished under this contract will be of cream color, it is said, and will be used on the interior. The building will be of Corinthian architecture, 385 by 304 feet, with a 4-story central section, 3-story western section and other sections of fewer stories. The Supreme Court room will be 94 feet square, 30 feet high. Cass Gilbert, New York, is the architect.

#### Textile Engraving Plant

Spartanburg, S. C.—The Delgrave Company, Newark, N. J., has leased a building here formerly occupied by the Star Hosiery Mill and has begun operations under the management of Robert Stockman, son of the company's president. The product of the plant consists of plates used for printing cloth, the pattern desired being engraved on the metal plate. When in full operation, the plant, said to be the first of its kind established in the South, will employ more than 100 men.

# Signs of Better Business

**ALLIS-CHALMERS MFG. CO.**, Milwaukee, has received orders totaling \$750,000 from the Pennsylvania Railroad for electric and propulsion apparatus for switching locomotives. This is in addition to orders received earlier from the railroad company for equipment costing \$1,000,000.

**DIXIE PINE PRODUCTS CO.**, Hattiesburg, Miss., has resumed full time operations, after a shut-down.

**ELIZABETH JAMES HOISERY MILLS, C. F. James**, president, have orders as far ahead as April, as contrasted with orders only as far ahead as the middle of January last year.

**LIGGETT & MYERS TOBACCO CO.** will reopen its Paris, Ky., redrying plant which has been closed for some months. Approximately 250 persons were formerly employed.

**ACME MFG. CO.** established 50 years ago at Wilmington, N. C., has been reorganized and operations will be enlarged. This announcement, coming at the beginning of the fertilizer manufacturing season, is heartening to the section because it means employment for about 150 persons.

**AUTOMOBILE TIRE MILEAGE CONSUMPTION** in 1930 and 1931 was 20 per cent in excess of sales. Harvey S. Firestone, Sr., president of the Firestone Tire & Rubber Co., in commenting on the company's 1931 business said that "in view of the conditions and difficulties, the statement from a sales and profit standpoint is the best the Firestone organization has ever made. The net profit for 1931 was nearly four times that of 1930, and it will more than provide for both common and preferred dividends."

**SOUTHERN EXTRACT COMPANY**, Knoxville, Tenn., after making extensive plant repairs, is to go on full time operating schedule.

**ELECTRICAL OUTPUT** of the light and power industry for 1931 totaled more than 85,000,000,000 kilowatt-hours. While it is below the production of 1930 and 1929 it is about 4,500,000,000 kilowatt-hours above the production of 1928, the highest up to that year.

**SEABOARD PUBLIC SERVICE COMPANY** subsidiaries showed a gain of 14.2 per cent in total kilowatt hour sales in November over the same month of the year before. New and additional power contracts signed during November will result, it is estimated, in an increase in annual revenue of subsidiaries of \$62,899. Rural electrification along company lines has made a substantial growth. For the first 11 months of 1931, rural customers purchased 9,637,000 kilowatt hours as compared with 5,547,000 kilowatt hours for the same period of 1930.

**COTTON PRICES**, in view of general conditions and fluctuations in price of securities, have held within more stable limits than the drastic declines experienced by other commodities.

**LIFE INSURANCE** sales during 1931 averaged about \$300,000,000 for every working day, according to the Life Insurance Sales Research Bureau. The sales volume during the closing months of 1931 was most encouraging.

**AUTOMOBILE SALES** in the Atlanta territory during 1932 will be 60 to 70 per cent more than in 1930 and 1931, states the Atlanta Constitution in an editorial quoting the opinion of officials of the Hudson Motor Car Company while on a recent visit to that city.

**EXPENDITURES** of the Chesapeake and Potomac Telephone companies will amount to \$16,000,000 for betterments and additions in Maryland, District of Columbia, Virginia and West Virginia in 1932. This is an increase of \$2,500,000 compared with 1931.

**SILK MILLS** in the High Point, N. C., territory added 400 men recently.

The Stehl Silks Corporation and the Hillcrest Silk Mills will provide employment for 400 workers, the Stehl mill to operate three eight-hour shifts instead of two shifts, and the Hillcrest to run two shifts instead of one.

**THE WATERMAN LINE** is expending \$300,000 in Mobile in installing refrigerating plants in four steamers, making it possible to carry Florida citrus fruits, packinghouse products and other perishables to ports of the United Kingdom. Work is being handled by the Alabama Drydock & Shipbuilding Company.

**WHITE MOTOR CAR COMPANY** has placed orders for 13,500,000 pounds of materials for use in manufacturing the 774 heavy duty White trucks bought by the city of New York. Approximately 600 orders were placed with 150 manufacturers of steel, rubber, glass and many other basic commodities in more than 50 cities. In making the announcement, A. G. Bean, president of the White Company, made the significant statement that practically all the materials to fill the New York order had to be purchased, because only a very small inventory was on hand.

**PRELIMINARY CONSTRUCTION** budget of the Byllesby Engineering and Management Corporation totals over \$25,000,000 for 1932. This includes \$3,508,000 for projects now under construction. The largest part of the expenditure planned for 1932 will be \$16,347,000 in the electric department, the gas department will expend \$3,319,000 and \$5,338,000 will be expended for other departments, including general construction.

**COLUMBIA, TENN.**, plants resume operations after short holiday shutdowns giving employment to several hundred workers. Full time operation is reported by Columbia Mill & Elevator Co., W. M. Dean Marble Co., and Oakes Chair Factory. The Massachusetts Knitting Mills, manufacturers of full-fashioned hosiery, have been operating day and night for several weeks and the Washington Manufacturing Co., after installing additional work clothing machinery is to resume operation at double its former capacity.

**TENNESSEE ELECTRIC POWER CO.**, according to J. C. Guild, vice-president, Chattanooga, will expend \$2,000,000 on new construction in 1932.

**JACKSON BROTHERS LUMBER COMPANY**, pending settlement of a voluntary receivership, has reopened its Fayetteville, N. C., plant providing employment for 150 men.

**MOTOR IMPROVEMENTS, INC.**, Newark, N. J., manufacturer of Purolator oil filters for automotive engines, oil burner motors and gasoline lines, has placed orders for immediate delivery of three carloads of sheet and strip steel with the Wheeling Steel Corporation, Wheeling, W. Va., and the Leechburg Steel Corporation, Leechburg, Pa.

# IRON, STEEL AND METAL MARKET

## Weakness in Steel Prices

Pittsburgh, January 4—[Special.]—Additional price weakness has developed in the steel market and there is no logical explanation for it consistent with the theory prevalent during the period of very stable prices, covering somewhat more than the third quarter of last year. All along the line mills were then punctilious to avoid price cutting or anything that might appear like shading or making the slightest concession. The explanation was that steel companies were already showing losses, that orders individually were small and to cut a price would bring only an insignificant order while the whole market would decline.

Of late, the volume of business has been still smaller, and the former theory should apply with even greater strength, but it does not. Declines coming to light last week included one in steel bars on the Pittsburgh basis, following a decline a month previous in the Chicago basing price, and in the sheet market generally. Previous declines began with one in strips late in October, followed by additional weakness lately, while there was a general decline in shapes and plates. Tin plate declined 25 cents a box or about \$5 a ton October 1, but that was regarded as an annual adjustment, as tin plate unlike other steel products is still subject to the contract habit. In contrast, nails and wire products generally appear perfectly firm at their recent advances, but the matter is still to be tested, as deliveries on old engagements may extend through January 15.

Losses reported in the September quarter were substantial and reports for the December quarter will prove still poorer, but the losses are not in "out of pocket" costs but in depreciation and general running expenses. In accepting and executing a given order a mill receives much more than a new dollar for an old, and that is why recent price declines and weaknesses prove disconcerting, for the market had really been stable and once a price is dislodged there is no defined stopping place for the declining tendency thus developed. Mills in various instances are trying to hold old prices for first quarter, meanwhile signing up customers on first quarter contracts at concessions from such prices, a practice which has not worked any too well in the past, in better circumstances than now exist.

Steel production is increasing but slightly over the rate of the last fortnight, about 20 per cent of capacity. This is not according to precedent, which

calls for marked seasonal increase immediately after the close of December, but the precedents are of little value, having been made in times of activity. With the present depression, actual ultimate consumption may increase in former seasonal proportion, but the buying against it be sluggish. Spring brings heavier consumption, on account of outdoor work, and it was buying habits more than necessity which in the past caused January to show such improvement. The steel trade expects its substantial improvement in March or late February instead of at the usual time.

Not a single steel consuming line is at all active, but few are out completely, and none has definitely visible prospects of material improvement. An exception is the automobile industry, which is not picking up at present to any extent, but had such extremely light production in the last three months that there must be some substantial improvement as the season of public buying approaches.

There is a theory, widely prevalent in steel circles, that of late steel demand has been below the actual needs of the country, going at its reduced rate, and that some sort of a rebound is necessary in the course of time, apart from such improvement in general business conditions as is hoped for. At the moment the farm implement industry is perhaps doing better than other industries, partly because it had a spell of months with almost no production, up to a couple of months ago.

## Business Slow and Prices Low in the Metals

New York, January 4—[Special.]—Most of the metals closed 1931 at, or close to, their low price levels for the year. Copper closed a cent per pound higher; tin was up a cent; zinc was higher by only 50 cents per ton; lead was at the low and silver was considerably higher than the pit point. Business in the metals has been very slow as was natural for this time of year.

For the past week commodity prices in general were a shade higher, the average having been brought up by a sharp rise in tin and advances in prices of certain foodstuffs. It is expected that price trends of the metals will be somewhat higher early this year, that at least being the usual custom of the metals.

A few bright spots among industrial developments have appeared. The steel

industry did not get down to as low an operating base as had been expected during the holiday period, 20 per cent having been the minimum, but the pace this week is expected to be fully 25 per cent of capacity, while 35 to 40 per cent is expected by the end of this month. In the Birmingham district, operations are approaching a 50 per cent pace.

Structural steel sales have been the briskest since September. Makers of farm implements are buying raw materials more freely; the automobile manufacturers are purchasing their raw supplies, including the metals, on a much broader scale. It is reported that Ford has postponed purchasing his steel requirements again pending a solution of a mechanical trouble involving the 1932 model, which is said to have something to do with spring suspension.

The past week has been unusually quiet among the metals, partly because inventory-taking is at its height and many plants are closed down entirely. Even lead, which had been the briskest to the eve of the holidays, has become stagnant. Export sales of copper have been running from 25 to 500 tons daily. Tin business has been light because prices are regarded as too high by comparison with levels which have prevailed recently.

Official announcement of curtailment of copper production among producers of the world appeared to have the effect of slowing down copper business rather than stimulating it. This situation is just a repetition of what happens in many markets when announcement of expected good news has a dulling effect on business. The copper trade will soon announce a revised system of marketing copper abroad. Meanwhile agitation for a duty on copper continues and labor is joining forces with those who favor a duty. Thus the Montana Federation of Labor has gone on record as approving a duty of six cents per pound on the red metal.

It is announced that the German Government has again agreed to subsidize its largest metal producer, the Mansfeld Mining & Smelting Co., for another year. This will assure full operation throughout the year for 22,000 workers. It was a choice of paying out doles to the idle miners and metal workers, or giving a subsidy. The latter course was chosen. The cost of copper production for the company is about 10 cents per pound. The company would therefore have been compelled to shut down but for the Government aid.

It is almost certain that surplus stocks

of copper are increasing rapidly, though the American Bureau of Metal Statistics has not given out statistics since the September figures. It is believed that by March, however, the effect of curtailment will be felt and that a change in trend will have taken place. World production is scheduled to be 85,000 tons monthly, effective immediately, as against previous production of 120,000 tons monthly. Present consumption is estimated at under 100,000 tons monthly.

Sales of lead and zinc concentrates in the tri-State district the past year have been the smallest since 1897. Prices also have been the lowest for the present century.

The price of copper has fluctuated in 1931 between 6½¢ and 10½¢ per pound, while the swing in 1930 had been between 9½¢ and 18 cents per pound. In copper circles it is believed the next major change in prices will be upward.

In the case of all metals, surplus stocks are very high as the new year begins, the highest on record in the case of copper and some other metals. The large stocks are the principal obstacles which the metal producers have to face over the next few months.

### Birmingham Expects Better Times

Birmingham, Ala., January 4—[Special.]—The Birmingham industrial section stands at the threshold of better times. Tangible evidence is at hand for need for production, not a great output as compared to the past 12 to 18 months, but a gradual improvement. It is not improbable that the turn for the better is to be a temporary condition, but there is every reason to believe that once the pendulum is swinging in the right direction it will gather strength.

The last week of the old year saw general resumption of operations in various directions, with few exceptions. These resumptions had to do with steel and steel fabrication, iron molding and in other circles.

Fairfield Works of the Tennessee Coal, Iron & Railroad Company, which include nine open hearth furnaces, sheet, plate, strip and other mills, have got back to the pace that marked operations for the 90 days up to the Christmas holiday.

In the immediate district and a little removed are plans for general activity. The Dixie plant of the Goodyear Tire & Rubber Co. is taking on a six-day operation schedule next week; the Gadsden plant of this concern, together with its cotton mills not so far away, will provide for an output of 5000 and more automobile tires daily. The Superior Lime

and Hydrate Co., H. G. Bridgewater, president, at Pelham, 18 miles south of Birmingham, will begin shipping 25 cars a month of hydrate to the city of New Orleans for purification of domestic water supply, and 25 cars monthly of lime to the Gulf States Paper Co., at Tuscaloosa, for manufacture of kraft paper. The lime works will give employment to 125 men and go through a solid year of activity, coal to be used in the kilns. Hardie-Tynes Manufacturing Co. is lowest bidder on the gates, locks and other steel appurtenances for the dam, at Harvey, La., of the intercoastal channel being constructed by the government between Louisiana and Texas, this one contract to take 860 to 1000 tons of steel alone.

The Ingalls Iron Works Co., in leasing a portion of the plant of the Chickasaw Shipbuilding Co., at Mobile, from the Tennessee Coal, Iron & Railroad Company has enlarged its possibilities and has already booked business which speaks of an active period ahead. The first contracts reported included a dredge which is using more than 800 tons of steel made and fabricated in Birmingham.

Harbors and rivers appropriation by Congress expected within the next few months will bring about development on the Warrior river, within the Birmingham industrial district, providing for much work and the use of quantities of material. The government will make another survey of possibilities of transportation service of the Coosa-Alabama rivers and within the year there will be some tangible evidence of development. The Warrior-Tombigbee barge line of the Inland Waterways Corporation had a good year, everything considered, and some months showed profit. Engineering propositions on the Warrior-Tombigbee anticipated during the year will be consolidation of locks and dams in the vicinity of Tuscaloosa, new locks on the upper end of the Warrior river to make the Sipsey river navigable for coal handling.

The survey completed recently under the sponsorship of the Birmingham Industrial Board will have effect. Possibilities and actual development under way in the State are stated as being excellent. Further development is seen in the operation of the Muscle Shoals properties other than by the government. While no authoritative statement is forthcoming it is understood that plans have been considered which will mean great things for Alabama and Tennessee in chemical development, the entire South to feel some of the benefit accruing.

Further evidence of a gradual improvement in general business, manufacturing and other lines is to be noted.

### Better Copper Outlook

Indications point to a better year for the copper industry in 1932, says S. E. Bramer, president of the Copperweld Steel Company, Glassport, Pa. He believes that the commodity will be stabilized, confidence re-established and that normal production, fabrication and consumption will follow. Overproduction and greatly reduced consumption, aggravated by a loss of faith on the part of the public in the ability of copper producers to stabilize the industry, have built up an enormous surplus in copper stocks, according to Mr. Bramer. Having suffered heavy losses, producers have finally realized the necessity for a sane program of production, but, in the opinion of Mr. Bramer, the benefits of curtailed production will probably not be felt until the second quarter of 1932. He goes on to say:

"Our company views the future with great optimism, especially in view of the established economic need for non-rusting materials. Copperweld, by combining steel and copper to give high tensile strength with resistance to corrosion, has its own established field of application. It is economical to use, both because of savings possible in construction practices and because of its long life under adverse conditions.

"The country has suffered very little internal loss other than distress of mind, lack of confidence and a mistrust of our credit situation, all of which is temporary and is chargeable to the ridiculous decline in our security market. When confidence is reestablished the prices of commodities and securities will undoubtedly adjust themselves to a fair basis more nearly in line with fundamental values."

### The Steel Railway Tie

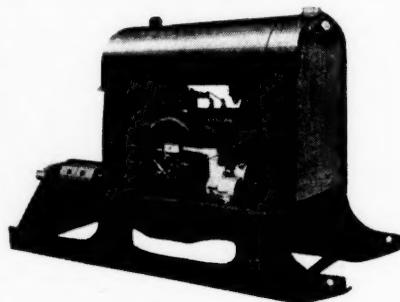
Belief that the steel railway tie has passed the experimental stage in South Africa is expressed by Assistant Trade Commissioner Du Wayne G. Clark of Johannesburg, who says that 6,000,000 now are in use there. While these ties represent an appreciable financial expenditure, somewhat out of line with prices for wood ties, the engineering department of the railways has decided that the difference can be justified by the longer period of service obtained from the steel product. The price for the 80-pound section was \$2.34 each; for the 60-pound section, \$1.54. Wood ties, it is understood, can be secured for something like 15 to 20 per cent less.

Preliminary plans are being prepared by Holabird & Root, Chicago, Ill., for an addition to the bank and office building in Oklahoma City, Okla., of the Tradesmen's National Bank.

## NEW AND IMPROVED EQUIPMENT

### Industrial Motor Stand

In describing outstanding features of the "Sieco" Industrial Model "A" Motor Stand and pulley which it manufactures, the Southern Iron & Equipment Company, Atlanta, Ga., states that the stand is composed of practically all Ford parts and may be serviced by any Ford dealer. The standard Ford truck clutch is used, with a handle for clutch release, assuring easy and gradual starting; spline shaft is made of high grade Maxel machine steel and is supported by two No. A-7025 ball bearings and especially constructed housings to fit; gas tank is of 14-gauge steel, of 10-gallon capacity, and built in the hood with a positive feed to carburetor; top is 14-gauge steel, and built as a unit with the fuel tank; motor mountings are of heavy structural steel; pulleys are 6-inch to 10-inch in diameter and may be furnished to take an 8-inch belt; back panel has slots for ammeter, coil, spark and gas control; switch, spark, gas, choke and starter controls are furnished; the frame is designed for installation of a Pierce governor; holes



Uses Standard Ford Parts

are provided in skid members to permit bolting to any foundation; and any special adaption to suit requirements may be supplied. Length of the stand is 66 inches, width 26 inches, height over all 42 inches and height from floor to center of shaft 12 inches. It is adapted to floor surfacing machines, well drilling, feed mills, lighting plants, feed cutters, motor boats, saw mills, concrete mixers, stone crushers, silo fillers, centrifugal pumps, ice saws, spraying machines, small cotton gins and other industrial uses.

### Grapho Babbitt Metal

The Lehigh Babbitt Company, Allentown, Pa., has introduced Grapho Babbitt Metal, made from pure virgin metals mixed with a high content of graphite. The alloy is made on tin as well as on lead base, and does not separate from

the graphite during pouring, it is declared, while it is handled like ordinary metal. Grapho Babbitt may be applied to all bearings, and is said to be particularly adapted to severe loads and operating conditions. It may be used even for submerged journals with water lubrication. The principal advantages of such a metal, according to its manufacturers, are the "extremely reduced bearing temperature, the reduced friction load, long wear, low oil consumption and high dependability in case of oil supply failures."

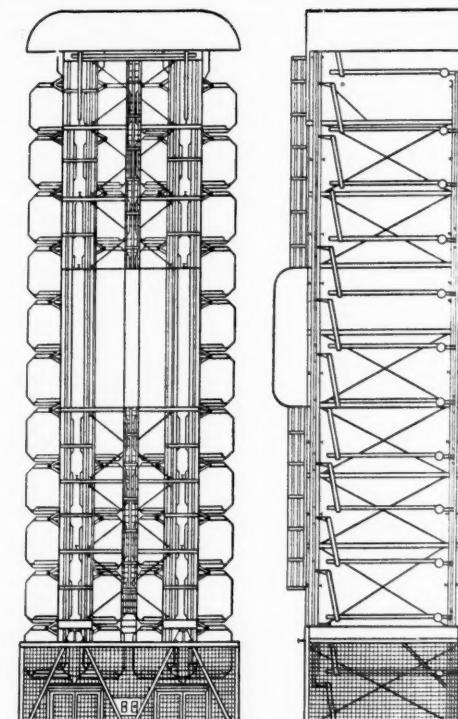
### Photoelectric Eye Operates Spray Gun

Priming coats of paint may now be applied to lumber with the aid of the photoelectric eye, thus protecting lumber from change in moisture content, infection by fungus growth, etc. Spray equipment has been developed for this purpose by the DeVilbiss Company, Toledo, Ohio, with the assistance of the General Electric Company. The new equipment operates at a speed of 60 to 200 lineal feet per minute, depending on the speed of conveyors feeding lumber to and taking it from the priming machine. The operation is entirely automatic. Priming

equipment is in the form of a spray painting booth with apertures through which lumber enters and exits. Two sets of spray guns operate inside the booth. As lumber enters it trips a small flag which intercepts a beam of light falling on one of two photoelectric tubes, setting up an impulse that causes the first set of spray guns to operate, coating the face, one edge and one end of the board as it passes through the booth. When the board reaches the exit side, it actuates a second photoelectric relay in the same manner, causing a second set of spray guns to spray the uncoated portion of the board as it leaves the booth. The "flags" are released as the lumber leaves, permitting light beams to shine on the photoelectric tubes once more and stopping the spray until the next board arrives. The Devilbiss Company estimates the cost of such priming at \$8 to \$10 per thousand board feet. While aluminum paint is popular as a primer, other materials such as lead, paint, oil, etc., may be used with the equipment.

### Machine for Vertical Parking

A vertical parking machine for automobiles is to be installed in Chicago's loop district; it is now under construction at the East Pittsburgh (Pa.) Works of the Westinghouse Electric and Manufacturing Company. As the first public installation of its kind, this new machine is regarded as coming a step nearer to the solution of the parking problem in the Loop. Forty-eight cars, 24 in each unit, will be accommodated at one time in a structure 105 feet high, on a ground area 32 by 24 feet, only a little more space than is required for a two-car garage. Operating on a continuous chain principle, the machine has been described as an elongated ferries wheel. It will incorporate complete safety devices and will not operate with an individual in the enclosure or when the doors are open. A separate cradle will be provided for each automobile. After a car is parked the machine will be operated to bring a vacant cradle into position for the next car. Each machine will include a 75-horsepower direct-current elevator-type motor, elevator-type brake and rheostatic control. The machine will be placed in operation early in 1932. At East Pittsburgh, a station handling 144 cars has been in operation for a year.



# CONSTRUCTION DEPARTMENT

## and

# NEW ENTERPRISES

Covering the initial announcements of new undertakings with additional information about enterprises previously mentioned. The date at the end of an item indicates preliminary facts were given in a previous issue.

When writing to a new firm or corporation the name of at least one of the incorporators should be placed on the envelope to expedite its handling by the local postoffice. Mail may be delayed unless complete address is given.

**Building and Construction Proposed and Contracts Awarded; Manufacturing, Mining, Power, and Land Developments; Public Works; Transportation; Communication; Financial Enterprises; New Business Opportunities Reported in the Sixteen Southern States.**

The Daily Bulletin of the Manufacturers Record gives each business day advance news published in this weekly review. It is invaluable to those requiring prompt information. Subscription price \$40.00 a year.

### Airports, Airplane Plants, Etc.

Ala., Maxwell Field—Van Gordon Construction Co., Atlantic Natl. Bank Annex, Jacksonville, Fla., reported, has contract at \$46,830, for paving aprons and drains.

La., New Orleans—Re-organization of Wedell-Williams Air Service, Inc., Harry Williams, Pres., Whitney Bldg.; increased capital stock \$50,000 to \$175,000; will be known as Wedell-Williams Air Service Corp.

Okla., Oklahoma City—Oklahoma Aviation Service, Inc., Clint T. Johnson, Pres., 2130 W. Park St., reported, soon begin construction of hangar authorized by city at air terminal; present municipal hangar at old field will be moved; revised plans call for outside dimension of 105x120 ft. for hangar; fireproof with shop for engine and plane repairs; office 30x120 ft. 12-24

Tex., Duncan Field—H. J. McMullen & Co., Inc., Bedell Bldg., San Antonio, reported, has contract at \$34,000 for roof for engineering shops under construction; A. J. Rife Construction Co., 1913 N. Howard St., Dallas, Gen. Contr. 12-24

Va., Langley Field—A. H. Gulon & Co., 256 W. Main St., Gastonia, N. C., has contract at \$15,680 for construction heating plant and repair of L. T. A. machine shop. Piedmont Plumbing & Heating Co., Gastonia, N. C., for heating plant. 12-10

Va., Langley Field—See Want Section—Bids Asked.

W. Va., Williamson—Borderland Coal Corp., J. T. Morris, Gen. Mgr., reported, considering establishment of airport at Borderland, near here, to serve Williamson and Pikeville.

### Bridges, Culverts and Viaducts

#### Proposed Construction

D. C., Washington—Office Public Buildings and Public Parks Comsn., John Nagel, Engr., 1613 Navy Bldg., has low bid from W. C. Bridgell Co., Inc., Mechanics Natl. Bk. Bldg., Baltimore, at \$41,290, for bridge, L St., Rock Park, over Rock Creek. 12-24

Ga., Atlanta—City, C. E. Kauffman, Engr., of Bridges, has preliminary plans for North Ave. underpass under tracks of Southern Ry.; rein. conc. retaining walls, curb walls and floor slab on steel girders, 60 ft. wide, 36 ft. between curbs, approx. \$58,500. 12-24

Ga., Atlanta—City, C. E. Kauffman, Engr., of Bridges, has low bid from Flagler Co., Red Rock Bldg., at \$30,482, for Whitehall St. bridge. 12-24

La., New Orleans—Successful bidders on Mississippi River bridge for New Orleans Public Belt R. R., Frank H. Joubert, Sec. Treas. & Gen. Mgr., Municipal Bldg., agreed to extend time for awards under their low bids until June 30, 1932; Modjeski, Masters & Chase, Const. Engrs., Keystone Bldg., Harrisburg, Pa., and 121 E. 38th St., New York. 12-31

La., Raceland—State Highway Comsn., O. K. Allen, Chmn., Baton Rouge, has plans approved by War Dept., Washington, for bridge over Bayou Lafourche to replace existing structure. 12-17

Mo., Independence—Jackson County, L. E. Koehler, County Engr., and Chicago & Alton R. R. Co., A. Chinn, Ch. Engr., Chicago, Ill., plan widening rein. conc. viaduct over tracks, Van Horn road between Kansas City and Independence, \$47,538.

Tex., Houston—Harris County Commsr. Court instructed Charles R. Halle, County Engr., to open negotiations with Texas & New Orleans R. R. Co., R. W. Barnes, Ch. Engr., Houston, and Missouri Pacific R. R. Co., E. A. Hadley, Ch. Engr., St. Louis, for 22-ft underpass, Westheimer road, 30-ft. underpass Bellaire Blvd., and 22-ft. underpass, Market St. road.

Virginia—See Roads, Streets and Paving.

WEST VIRGINIA—State Road Commsn., Geo. E. White, Sec., Charleston, has low bids for road and 4 bridges in following counties:

Mercer—1.4 mi. grading, draining, Flat Top Yards-Wolfe road, Clinch Valley Construction Co., Tazewell, Va.;

Greenbrier—Caldwell Bridge, Nelson H. Clark, Luray, Va., \$39,548;

Hampshire—Loman's bridge, Davids & Reynolds, Morgantown, \$12,854;

Preston—Cheat Bridge, T. A. Loving & Co., Goldsboro, N. C., \$39,594;

Webster—Hog Island bridge, substructure, Clark & Lewis, Luray, Va., \$9336; superstructure, Nelson H. Clark, \$17,172. 12-17

#### Contracts Awarded

Ala., Birmingham—City Commsn. let contract to Christie, Hutchinson & Burton, 502 N. 21st St., at \$12,877, for viaduct, 11th Ave., N., over railroad tracks, 27th St.; 75 ft. long, 50-ft. roadway, 2 10-ft. sidewalks, rein. conc. 10-15

Louisiana—Bd. of State Engrs., 207 New Orleans Court Bldg., New Orleans, let contract to McWilliams Dredging Co., Canal Bank Bldg., New Orleans, at 15.7 cents per cu. yd., for drainage projects totaling 40,000 cu. yd. 12-31

La., Barksdale Field—Shreveport—Capt. Geo. E. Lamb, Constructing Quartermaster, let contract to Swinney & Coleman, Plaque mine, for south boundary drainage canal. 12-24

South Carolina—U. S. Engr. Office, Charleston, has low bid from Merritt Dredging Co., Jacksonville, Fla., at \$11,244, for dredging in waterway between Charleston and Winyah Bay, and at \$13,680, on alternate proposal for 136,799 cu. yd. 12-17

Tex., Orange—Orange County voted \$541,000 drainage bonds.

Tex., San Benito—Cameron County Water Improvement Dist. No. 16, B. B. Clark, Clk., Box 995, acquired irrigation system of Rice Tract Irrigation Co.

### Electric Light and Power

Electric light and power work in connection with many LAND DEVELOPMENT operations involves the expenditure of large sums of money. See that classification for details.

Ga., Cordele—Power Comsn., Crisp County, W. P. Fleming, Sec.-Treas., will not submit proposition for sale of County Power plant to vote of people. 12-31

Mo., Neosho—Empire District Electric Co., Joplin, reported, has 5 yr. lighting contract.

Mo., University City, St. Louis—City votes Jan. 26 on \$500,000 bonds for street lighting; E. D. Ruth, Mayor.

Okla., Guthrie—Oklahoma Gas & Electric Co., 321 N. Harvey St., Oklahoma City, reported, plans high voltage transformer station; cost \$25,000; also 23,000 volt transmission line, Shawnee to Tecumseh; cost \$25,000; Bylesby Eng. Co., 231 S. LaSalle St., Chicago, Ill., Engrs.

S. C., Woodruff—Southern Public Utilities Co., 426 S. Church St., Charlotte, N. C., reported, installing white way system on Main St., U. S. 12-17

Va., Waynesboro—City, I. G. Vass, City Mgr., reported, installing white way system under supervision of Virginia Pub. Service Corp., Charlottesville; cost \$25,000.

### Foundry and Machine Plants

Tenn., Nashville—Phillips-Rutorff Mfg. Co., 1401 Hamilton St., erecting \$25,000, 3 story conc. and steel addition to enameling and mfg. gas ranges and heating appliance 50 per cent.

W. Va., Fairmont—Fairmont Foundry & Mfg. Co., 311 Leona Court, L. J. Carskadon, Pres.-Gen. Mgr., company is re-organization of another firm; gray iron and non-ferrous castings products of plant; no additional buildings contemplated at present. See Want Section—Machinery and Supplies. 12-31

### Flour, Feed and Meal Mills

N. C., Goldsboro—Little River Milling Co., incorporated; W. P. Rose, Wayne Natl. Bank Bldg.

### Garages and Filling Stations

Fla., Jacksonville—George's Auto Laundry & Service Co., George Barreto, Mgr., reported, construct auto laundry at State and Hogan Sts.; operated on conveyor system; install modern equipment.

Fla., Pompano—Pompano Auto Sales Co., incorporated; J. S. Powell.

Ga., Atlanta—City, C. E. Kauffman, City Engr., City Hall, reported, erect garage, Hunter and King St., S. E.; capacity 250 cars; 2 stories; rein. conc.; preliminary plans in progress.

Ga., Winder—Wofford Oil Co., 140 Spring St., S. W., Atlanta, reported, construct service station; struc. steel, conc. tile and

comp. roof; E. F. Hetrick, Engr., 416 Norris Bldg., Atlanta.

Ky., Lexington—Combs Lumber Co., 439 E. Main St., reported, has contract for remodeling Fred Bryant Motor Co.'s building E. Main St.; erect second story at front; expend \$25,000.

Ky., Owensboro—Fred Weir, Inc., capital \$50,000, chartered; Fred L. Weir.



Md., Baltimore—Gene's Auto Place, Inc., chartered; Eugene I. Rosenfeld, 1024 Linden Ave.

Md., Baltimore—Thos. F. Leonard, 3615 Brehm's Lane, reported, has contract for filling station, York Rd. and Northway, for Lord Baltimore Filling Stations, T. J. O'Connell, Engr. of Construction, American Bldg.; 1 story, brick and stucco.

Mo., Carthage—Tallman Vulcanizing Co., incorporated; Russell C. Tallman.

Mo., Independence—G. W. Bradley Motor Co., capital \$30,000, incorporated; George W. Bradley, 725 Proctor Pl.

N. C., Charlotte—Pyramid Chevrolet Co., Inc., capital \$100,000, chartered; J. H. Little, Mayfair Manor.

Tenn., Chattanooga—Wofford Oil Co., 140 Spring St., S. W., Atlanta, Ga., reported, construct service stations; struc. steel, brick, conc., tile and comp. roof; E. F. Hetrick, Engr., 416 Norris Bldg., Atlanta, Ga.

Tex., Harrisburg—Milby Motor Co. incorporated; J. G. T. Milby.

W. Va., Huntington—F. F. Starcher, 826½ Sixth Ave., reported, repair burned building occupied by Case Auto Laundry Co.

Va., Roanoke—Withers-Johnson Chevrolet Corp., 323 Fourth St., S. E., capital \$50,000, incorporated; George E. Withers, Lynchburg.

### Gas and Oil Enterprises

Ky., Middlesboro—Three States Oil and Gas Co., capital \$25,000, incorporated; F. F. Sharp.

Ky., Prestonsburg—East Kentucky Gasoline Co., incorporated; R. V. May.

Ky., Richmond—City, reported, acquired natural gas franchise of Richmond Water & Light Co.

La., New Orleans—United States Refining Co., H. M. Gilbert, Sec.-Treas., reported, acquired and will operate old Southport Refining & Export Co.'s plant at Southport; erect loading wharf; improve plant; F. W. Leahy Engineering Co., Engrs., 109 Tchoupitoulas St.; U. S. Oil Refining Co., Inc., is an independent company, composed of El Dorado, Ark., and Fort Worth, Tex., interests; E. L. Chapman, Fort Worth Natl. Bldg., Fort Worth, Pres.; Sam E. Wilson, El Dorado, Ark., V. P.; company plans, with co-operation of Traffic and Transportation Bureau of Assn. of Commerce, to barge oil direct from their Urbana field down the Ouachita and Mississippi Rivers to refinery at New Orleans; contract, reported, let to Louisiana-Mississippi Waterways Corp. to handle 2000 bbls. daily; will manufacture gasoline, gas oil, Diesel oil, etc.; will operate bulk distributing plant.

N. C., Enfield—S. W. Dickens Oil Co., capital \$25,000, incorporated; S. W. Dickens.

Okl., Bristow—H. F. Wilcox Oil & Gas Co., 310 W. Sixth St., Tulsa, advises definite plans for expansion program for Bristow refinery not decided upon; P. I. Tinkler, Engr. in charge, Bristow.

Okl., Drumright—DeWitt & Howard, Drumright, reported, has contract for pump station for Stanolind Pipeline Co., Philcade Bldg., Tulsa; cost \$25,000.

Okl., Oklahoma City—Reno Operating Co., incorporated; Leon S. Hirsh, Midwest Bldg.

Okl., Wilburton—Limestone Oil & Gas Co. increased capital \$50,000 to \$500,000.

Okl., Willow—Farmers Union Co-Op. Oil and Gas Co., incorporated; M. A. Wall.

Tex., Beaumont—Yount-Lee Oil Co., Inc., San Jacinto Life Bldg., advises are building 10¾-in. OD pipe line from Beaumont to High Island, distance of 43 miles and 6-in. water line into High Island, distance of 10 miles; all J & L pipe purchased from Norwell-Wilder Supply Co., Beaumont, two 80,000 bbl. tanks being erected at High Island purchased from and erected by Petroleum Iron Works of Texas, Beaumont; also erecting brick pumping station at High Island; brick purchased from Beaumont Brick Co., struc. steel from Petroleum Iron Works and building is being constructed by King-Huff Construction Co., Beaumont; machinery purchased from Dayton-Dowd Co., 300 York St., Quincy, Ill.,

and Cooper-Bessemer Corp., Mt. Vernon, O. 12-24

Tex., Kilgore—De Arman Producing Co. incorporated; E. H. DeArman.

Tex., San Antonio—Bostex Oil Corp., 1202 Alamo Natl. Bldg., incorporated; Chas. M. Boston, Pres., Swank Bldg., Johnston, Pa.; 12-3

Tex., Tyler—Wissman Oil Corp. incorporated; Nat Wissman.

### Ice and Cold-Storage Plants

Ark., Conway—W. P. and G. L. Bleidt, 5023 Asher St., Little Rock, reported, construct 18 ton ice plant.

Tex., Lubbock—Crystal Ice Co. incorporated; A. G. Winn.

Tex., McKinney—Jack McCullough, County Farm Agt., reported, interested in establishment of cold storage plant for onion seed and onions.

W. Va., Beckley—Beckley Ice & Feed Co., capital \$25,000, chartered; G. A. Mohler.

Tex., Willow Springs—Arkansas Fuel Oil Co., K. E. Jones, Supt. Gasoline Div., advises gasoline plant company is building will have daily capacity of 30,000 gal. instead of 80,000 gal.; plant will be located in Lathrop area of East Texas oil field, 6 mi. west of Longview and 1½ mile from T. & P. R. R.; very little new material will be purchased, but will be salvaged from plants of company shut down in Arkansas and Louisiana; work started, completion April 1; no work contracted; construction under direction of K. E. Jones, Supt. Gasoline Div., Shreveport.

12-31

### Land Development

Ark., Little Rock—James McNeill acquired 700 acres 15 miles from city on Lonoke Highway.

Fla., Fernandina—Fernandina Beach Development Corp. developing subdivision; W. L. Beugnet, Surveyor; install water, light and sewer.

Fla., Jacksonville—Ban Howes, Inc., chartered; Gordon McCauley, Fla. Natl. Bank Bldg.

Fla., Miami—R. D. LaMar, Inc., chartered; B. Wilson, 721 N. W. 21st Ave.

Fla., Winter Haven—Winter Haven Golf Club, Inc., chartered; H. A. Lavey.

La., New Orleans—Manhattan Realty Co., Inc., chartered; Jos. B. David, 627 Poydras St.

La., New Orleans—Temple Realty Co., Inc., chartered; Jos. B. David, 627 Poydras St.

Md., Baltimore—Fayette Co., 11 E. Fayette St., incorporated; John Welsh, 11 E. Fayette St.

Mo., St. Louis—Abner Realty Co., Paul Brown Bldg., incorporated; I. F. Steinmeyer.

Mo., St. Louis—Goldman-Stiffelman Realty Co., incorporated; Soy Goldman, International Life Bldg.

Mo., St. Louis—Marvin Co., incorporated; Joseph Baris, 740 W. Gate St., University City, St. Louis.

Mo., St. Louis—Vernon Laux Realty Co., incorporated; Frank E. Morris, 506 Olive St.

Mo., St. Louis—Jupiter Realty Co., incorporated; Louis A. Dammert, 3438 Russell St.

Mo., St. Louis—Paul Brown Realty & Investment Co., incorporated; George A. Radford, 408 Hawthorne St., Webster Groves, St. Louis.

Okl., Ponca City—Indian Hills Resort Co., reported, completed preliminary surveys for lake and resort 5 miles east of city; J. W. Atherton, supervise construction.

Tex., Houston—Gulf Coast Holding Co., incorporated; R. Frank Sterling, 1903 Portsmouth St.

Tex., Houston—Mount Rose Land Corp., incorporated; R. C. Kuldell, 1400 South Blvd.

Va., Norfolk—Fentress Realty Corp., Bankers Trust Bldg., increased capital \$100,000 to \$225,000.

### Lumber Enterprises

Ky., Erlanger—Erlanger Lumber Co., capital \$25,000, incorporated; Charles P. Hagemeyer.

### Metal-Working Plants

La., Harvey—Favrot & Livaudais, Archts., Hibernia Bldg., reported, have plans complete Jan. 10 for 3 story, 120x160 ft., rein. conc. factory building for Continental Can Co., 521 N. Scott St., New Orleans, and 1

Pershing Sq., New York; first floor for storage, machinery on second, third floor for presses; install high speed machinery; will add open top type of can to New Orleans output; cost \$400,000.

### Mining

Mo., Joplin—Ozark Mines, Inc., lately incorporated by H. L. Smith, Iola, Kans.; C. E. Denny, Joplin, reported, acquired 500-ton mill and 290 acres proven mining ground for development.

North Carolina—Porter Placer Mining Co., Bridgewater, Frank R. Porter, Pres., Isothermal Hotel, Rutherfordton, plans operating plant at Portermill, between town of Bostic and Forest City, Rutherford County, for treatment of gold ores, monazite sands, etc.; company owns mill and now engaged in surveying and locating foundations at site on Broad River; mill machinery consists of 16x24-in. Blake crusher; trommels; 7 ft. Tardinge mill; 6 ft. Hardinge, and a 10 ft. Lane slow speed mill; with clarifiers in between and 8 Wilfley tables arranged for both concentration and amalgamation; after completion of this equipment will install complete cyanide installation; no contracts to be let; work by local labor; will also install complete equipment for separating Monazite sands electromagnetically and if market conditions justify further efforts will include complete chemical reduction of sands to thorium, etc.; have closed contract for this electric equipment. See Want Section—Machinery and Supplies.

Ola., Picher—Eagle-Picher Mining & Smelting Co., R. J. Stroup, Engr., office of Tri-State Mines, advises in regard to acquisition of Adams's mine, it is Eagle-Picher's intention to dismantle mill and make mine a unit for furnishing ore to central mill; bids for concrete and steel construction on central mill will be received some time during Jan.; work is being handled by Engineering Dept. of Eagle-Picher Mining & Smelting Co., Picher.

12-24

### Miscellaneous Construction

Arkansas—U. S. Engr. Office, 1006 McCall Bldg., Memphis, Tenn., advises seawall and levee at supply and repair depot, opposite Memphis, will be constructed by hired labor with government plant; bids will be asked in few weeks for steel sheet piling, timber piling and perhaps ready mixed concrete.

12-10

Ala., Marion—Bureau of Fisheries, Dept. of Commerce, Washington, reported, start construction Apr. 1 on fish hatchery 6 mi. from here; ponds to cover 500 acres; erect 5 brick dwellings for employees.

Fla., Hollywood—U. S. Engr. Office, Jacksonville, opens bids Jan. 28 for repairing north and south jetties, entrance to Hollywood Harbor (Port Everglades).

La., Lake Charles—Comms. of Lake Charles Harbor and Terminal Dist. W. P. Weber, Pres., Dock Board, will take over work of completing wharf and warehouse units; Elmer E. Shutts, Engr. for Dock Bd.

7-2

La., Monroe—Robt. S. Maestri, Comms. State Dept. of Conservation, 126 New Orleans Court Bldg., New Orleans, opens bids Jan. 12 for Black Bayou fish hatchery; unit prices and total bid for all items will be received on 24,700 cu. yd. excavation and levee, 1240 cu. yd. road and drivers gravel surfacing, 90 lin. ft. 12-in. corrugated pipe, 2900 lin. ft. property line fence, 2 14-ft. gates, 140 lin. ft. base pool fence, control structures, pumping station and residence; take separate bids on light and water plant complete in place, 1500 watt, 32 volts, capacity 7000 watt hours; also take separate bids on double acting system, 40-50 gal. tank, automatic control, 300 gal. per hour.

12-24

Miss., Greenville—Bd. of Mississippi Levee Comms. enlarge and improve ramps leading to conc. wharf, Mississippi River, foot of Main St. and Central Ave., Greenville.

Missouri—U. S. Engr. Office, 707 Postal Telegraph Bldg., Kansas City, let contract to C. W. Hunter, 177 S. Front St., Memphis, Tenn., at \$189,881, for 6890 lin. ft. standard pile clump dikes, Missouri River, Robinson Bend.

11-26

Missouri—U. S. Engr. Office, 707 Postal Telegraph Bldg., Kansas City, let contract to W. A. Ross Construction Co., 25th and Summit Sts., Kansas City, at \$184,926, for 5120 ft. dikes and 2100 ft. revetment, Missouri River, Balta Bend.

11-19

Missouri—U. S. Engr. Office, 707 Postal Telegraph Bldg., Kansas City, let contract to Kansas City Bridge Co., 510 Orear-Leslie Bldg., Kansas City, at \$167,793, for 5200 lin. ft. dikes and 2100 ft. revetment, Missouri River, Moberly Bend and Waverly Reach, Waverly Bend.

10-22

## CONSTRUCTION DEPARTMENT

## Manufacturers Record

Mo., University City, St. Louis—City, J. K. Monteith, Park Commr., 6801 Delmar St., opens bids about Feb. 1 for swimming pool and bath house; install recirculating system and other equipment; construction, \$45,000; equipment, \$20,000.

Tex., Dallas—City, O. H. Koch, Dir. of Public Works, let contract to McKenzie Construction Co., Smith-Young Tower, San Antonio, for diversion tunnel for Mill Creek, at \$92,734; 8x8 ft., solid rock, 3640 ft. long, 80 ft. below street.

Tex., Houston—Navigation Dist. Comms., Russell Wait, Sec., open bids Jan. 15 for steel shed, 60x30 ft.

## Miscellaneous Enterprises

Ark., Little Rock—Arkansas Methodist Coms., Dr. A. C. Miller, Editor, reported, construct 1 story brick building, rear 1018 Scott St.; 50x93 ft.; will be occupied by Keith Printing Co., N. Little Rock.

Fla., Daytona Beach—Florida Appliance Corp., incorporated; W. M. Cobb.

Fla., Jacksonville—Marion Turpentine Co., incorporated; L. Chappell, 236 Phelps St.

Fla., West Palm Beach—Forbes-Wells Corp., capital \$25,000, incorporated; E. A. Forbes, 29 Conniston Road; contracting.

Ky., Louisville—Lamppin Warehouse Co., capital \$15,000, incorporated; Wm. C. Dabney, 1481 S. 11th St.

Ky., Louisville—Vacu-Pipe Co., capital \$30,000, incorporated; George H. Wilson, 1808 Lauderdale Rd.

Ky., Nicholasville—Cumberland Tobacco Works, 434 Houston St., Nashville, Tenn., advises have made no definite arrangements for removal of plant. 12-31

Ky., Nicholasville—Louis Terry Corp., 500 Throop St., Chicago, Ill., reported, establishing plant for manufacturing rayon garments in building W. Oak St.

Ky., Paducah—Paducah Coca Cola Bottling Co., capital \$36,000, incorporated; Luther F. Carson, T. C. Carson.

La., New Orleans—Southern Laundries Inc., chartered; Mrs. Jas. C. Coleman, 518 Walnut St.

La., New Orleans—Broadway Mattress Works, Inc., chartered; Jas. L. Reed, 1936 St. Louis St.

Md., Baltimore—Lincoln Amusement Corp., incorporated; Kalman Flaks, 2904 Hilldale Ave.

Md., Baltimore—Continental Lacquer Corp., incorporated; Robt. B. Fisher, 6504 Holabird Ave.

Md., Baltimore—Hendler Creamery Co., making \$100,000 improvements to Hendler plant, 1100 E. Baltimore St., and to Horn plant, 446 N. Asquith St.; equipment includes conveying system in handling rooms, can washers, ice cream hopper systems; milk cooler, all contracted for from Lathrop-Paulson Co., 2459 W. 48th St., Chicago; Jensen Creamery Equipment Co., Bloomfield, N. J., and Majonier Bros., Chicago; stainless steel tanks not yet contracted for; Avon Construction Co., 216 E. Lexington St., has contract for building alterations including changes to shipping platform and to entrances, also in hardening room.

Miss., Biloxi—Helfensteller, Hirsch & Watson, Archts., 1501 Chemical Bldg., St. Louis, Mo., reported, received bids Jan. 12 for constructing 1 and 2 story creamery and ice cream plant, Callaway and W. Howard Sts., for Ness Creameries; 50x100 ft., rein. conc. brick and steel, built-up comp. roof, steel sash; cost \$50,000. Following contractors estimating: T. A. Pittman, Inc., Canal Bank Bldg., New Orleans, La.; Collins Bros., Contracting Co., Biloxi, Miss.; Smallman-MacQueen Construction Co., Inc., 1109 Fifth St., Birmingham, Ala.; Frank M. Hall Constructing Co., Dolph Bldg., St. Louis, Mo.; Boaz-Kiel Construction Co., Ambassador Bldg., St. Louis; Beckleheimer & Small, Hattiesburg, Miss.; W. G. Wetmore Construction Co., Jackson; W. C. Stout & Son, 136 N. Green St., Jackson. 12-24

Mo., Kansas City—One Hundred West Tenth Building Co., incorporated; T. M. Hauber, 4444 Wornall Road.

Mo., St. Joseph—Imperial Mineral Feed Co., incorporated; W. K. Baker.

Mo., St. Louis—General Homes Corp., incorporated; Harry C. Tabler, 4497 Pershing St.

Mo., St. Louis—Mungers Linen & Clover Leaf Towel Supply Co., incorporated; Louis Moscovitz, 5357 Ridge St.

N. C., Asheville—Morgan Candy Co., capital \$150,000, incorporated; C. E. Morgan, 67 Broadway.

N. C., Elkin—Riverside Novelty Co., capital \$50,000, incorporated; W. E. Jones.

N. C., Pinehurst—Haisley Painting Co., incorporated; E. T. Pleasants.

N. C., Raleigh—Raleigh Mausoleum and Vault Co., Inc., capital \$50,000, chartered; J. T. Mallard, 2012 Glenwood Ave.

Okla., Tulsa—Allen Electric Co., Philcade Bldg., Tulsa, reported, submitted low bid for wiring in connection with fire alarm system and Harni Signal Corps for mechanical equipment; Smith & Senter, Archts., Philtower Bldg. 11-26

Tenn., Chattanooga—Godsey Hardware Co., capital \$30,000, incorporated; R. L. Godsey, 2909 Sunset Ave.

Tenn., Memphis—Midwest Dairy Co., Duquoin, Ill., installing machinery building N. E. Cor. Union and Somerville Sts., for branch plant.

Tenn., Petersburg—Hoyle R. Hoover, Woodbury, reported, acquired interest in Petersburg Herald and Moore County News of Lynchburg.

Tex., Brownsville—Brazos Island Toll Road Co., incorporated; W. R. Swan.

Tex., Dallas—Macmillan Co. (Publishers), 1701 Ross St., reported, plans remodeling building, Ross Ave. and N. Akard St.; Bryan & Sharp, Archts., Construction Bldg.; Cedric Burgher Construction Co., Contr., 3027 Main St.

Tex., Houston—Henry C. Schumacher and Verger Hill, Smithville, reported, erect 4-story and basement building S. W. cor. Fannin and Prairie Sts.; Wilson Stationery and Printing Co., 508 Fannin St., Lessee; building will replace 3-story telephone building on site; conc. and steel, fireproof, 50x100 ft.; first floor for retail store, with show windows full length of building; upper floors for display rooms, manufacturing and storage; cost \$60,000.

Tex., Houston—Donigan Candy Co., incorporated; R. P. Donigan, 1740 Sul Ross St.

Tex., Orange—Commercial Pulp & Paper Co., C. A. Keiren, Engr. and Sup't, recently organized to take over plant of Yellow Pine Paper Co., reported, begin construction work by March 1; install new incinerators with disc evaporators, waxing machinery for waxed and supercalendar paper; annual capacity 10,500 tons paper; expend \$125,000. 12-31

Tex., Tahoka—Continental Chemical Co., P. J. McIntosh, Burt Bldg., Dallas, reported, soon let contract for erection several buildings, including evaporator building; pumping equipment, etc.; cost \$1,600,000; W. D. Alt, Engr., 301-D, Thomas Bldg.

Va., Alexandria—Anti-Fire Extinguisher Corp., J. G. Feldman, Pres.-Treas., located plant in Emerson Engineering Corp.'s bldg.; manufactures automatic fire extinguisher and alarm combination. (Lately incorrectly noted to manufacture anti-automatic fire extinguishers and alarms.) 12-10

Va., Norfolk—A. W. Criddle & Co., Inc., capital \$50,000, chartered; A. W. Criddle, Board of Trade Bldg.; steam heating.

W. Va., Buckhannon—Buckhannon Garment Co., reported, constructing addition to plant; increase weekly capacity to 600 doz. men's and boy's pants.

W. Va., Charles Town—Edmund E. Walton, reported, acquired George Washington Masonic Caverns on Springdale Farm, 2 miles southeast of city including 5 acres surrounding cave entrance.

W. Va., Fairmont—Fairmont Cleaners & Dyers, 509 Maple Ave., M. J. Delligatti, Pres., capital \$25,000; formed by merger of Ritz Cleaners & Dyers and Fairmont Cleaners & Dyers.

W. Va., Wheeling—H. Payne and E. Tomlinson, Salem, reported, acquired Eureka Tumbler Co.; will operate.

## Motor Bus Lines and Terminals

Ky., Richmond—T. S. Todd, reported, has contract for bus station, Third and Water Sts.; Consolidated Coach Corp., Lessee.

Md., Baltimore—New Century Cab Co., Inc., chartered; Reginald Ciambuschini, 6 S. East Ave.

Md., Baltimore—Mt. Vernon Cab Co., 1001 Bonaparte Ave., incorporated; John J. Gallagher, 1120 E. 20th St.

Mississippi—Gulf, Mobile & Northern R. R., Mobile, Ala., reported, applied to Mississippi Railroad Coms., Jackson, for franchise operate line from Tennessee-Mississippi line to Alabama Mississippi line over highways 15, 9, 24; would parallel the Gulf, Mobile & Northern line from Jackson to Mobile; Floyd Truck Line applied for franchise freight line Memphis to Greenwood, operate over highways 61 and 49-E; Tri-States Transit Co.,

for franchise 2 bus lines Jackson to Gulfport over highway 49 and from Vicksburg to Natchez, via highway 61; Natchez-Hattiesburg Bus line for line between Natchez and Hattiesburg; Peterson Transportation Co., line from Greenville to Winona.

Mo., St. Louis—Central States Motor Freight, Inc., capital \$20,000, incorporated; F. P. Shofstall, 1608 Cherry St., Kansas City.

N. C., Winston-Salem—Lentz Transfer & Storage Co., 232 S. Liberty St., George D. Lentz, Supervisor, reported, establish union motor freight terminal at 220 S. Liberty St. as terminal for 7 motor express lines; 60x100 ft.; fireproof; railroad siding in rear.

Tex., Galveston—Yellow Cab Co., J. M. Gibbons, Pres., 509 23rd St., reported, acquired Bolton's Black & White Cab Co., 2416 E St.

## Railways

Tex., Fort Worth—Texas & Pacific Ry. Co., E. F. Mitchell, Ch. Engr., Dallas, let contract to Abbott Construction Co., 1000 Foch St. for lowering grades west of Henderson St., approx. \$50,000, in connection with plan to build 3 viaducts over tracks in city.

Va., Richmond—Chesapeake & Ohio Ry. Co., H. C. Pearce, Dir. Pur. and Stores, Cleveland, Ohio, let contract to Standard Steel Car Co., Frick Bldg., Pittsburgh, Pa., for repair parts for 352 cars.

## Roads, Streets and Paving

In connection with LAND DEVELOPMENT large sums are expended for roads, streets, paving and sidewalks. Details will be found under that classification.

## Proposed Construction

D. C., Washington—Jas. A. Wetmore, Supvg. Archt., Treasury Dept., has low bid from Brady Bros., Frostburg, Md., at \$19,143 for walks at Dept. of Commerce Bldg.

KENTUCKY—State Highway Coms., H. D. Palmore, Engr., Frankfort, opens bids Jan. 26 for 18 roads (surfacing) in following counties:

Ballard—6.1 mi., Wickliffe-Paducah (US 60) road, LaCenter to McCracken County line;

Barron—12.1 mi., Glasgow-Bowling Green road, Glasgow to Warren County line;

Christian—14.1 mi., Hopkinsville-Madisonville (US 41) road, Hopkinsville to rock asphalt surfacing approx. 1.7 mi. north Crofton;

Daviss—8.4 mi., Owensboro-Henderson road, end of conc. paving approx. 3.5 mi. west Owensboro to Henderson County line;

Henderson—9.5 mi., Henderson-Dixon road, junction with "cutoff survey" to U. S. 60, approx. 5 mi. south Henderson, U. S. 41, to Webster County line; 9.5 mi., Henderson-Owensboro road, Henderson to west end Spottsville toll bridge; 5.8 mi., Henderson-Owensboro road, east end Spottsville toll bridge to Daviss County line;

Hickman—6.9 mi., Clinton-Bardwell (US 51) road, Clinton to Carlisle County line;

Hopkins—11.4 mi., Madisonville-Hopkinsville (US 41) road, Earlington to Christian County line;

Hopkins-McLean—10.5 mi., Madisonville-Sacramento (Dutch Fish Trap) road, near Bethlehem Church at end of surfaced road, to junction State Route 81 near Sacramento;

Livingston—16.5 mi., Smithland-Marion (US 60) road, Smithland (north end Cumberland River bridge) to Crittenden County line;

Logan—6.9 mi., Russellville-Central City road, Lewisburg to Muhlenberg County line near Dunmor;

McCracken-Livingston—15.1 mi., Paducah-Smithland (US 60) road, I. C. R. R. crossing near east limit of Paducah to Smithland at south end Cumberland River bridge;

Metealfa—3.5 mi., Edmonton-Tompkinsville road, intersection with Glasgow-Burkesville road, Beaumont, to Monroe County line;

Monroe—3.8 mi., Tompkinsville-Edmonton road, end of graded road near Rock Bridge P. O. to Metealfa County line;

Muhlenberg—8.0 mi., Central City-Russellville road, Beech Creek Junction to Logan County line;

Simpson—3.5 mi., Franklin-Tennessee State Line road—revisions between Franklin and Tennessee state line;

Webster—9.5 mi., Dixon-Henderson road, Dixon to Henderson County line. 12-31

La., Opelousas—City, Mayor and Bd. of Aldermen, open bids Jan. 12 for graveling Grolee St., 14 ft. wide, including culverts, etc.

Maryland—State Roads Coms., L. H. Steuart, Sec., Baltimore, opens bids Jan. 12 for

148 m  
near C  
SM-87-  
MAR  
Stewar  
Balti  
tapasco  
Ave., 1  
Harfor  
\$5,391  
Calver  
Freder  
Caton  
679.

MD,  
ways  
future  
Roads  
Lonev  
son B  
Pataps  
Comme  
1932.

N. C.  
Mgt., 1  
TEX  
evirhi  
ing 14  
followi  
Aust  
way 30  
of Bras  
way 2  
mi.  
n-620-C;  
Concl  
caliche  
Highw  
mi. wa  
DeW  
limest  
835-B&  
Free  
Highw  
connect  
Hall  
way 1  
4 line  
Jim  
Highw  
S 931-  
King  
way 4  
line, S  
Foco  
27, 10  
618-F  
27, 50  
west  
Real  
Count  
San  
Highw  
len to  
San  
Highw  
line.  
Upt  
bitum  
903-H

TE  
christ  
in fol  
Wha  
Highw  
line.  
Tyd  
way 4  
FAP  
Hal  
with  
18, Th  
602-A,

Tex  
Brady  
Glech  
mi. a  
to Co

Tex  
decki  
for 1  
and 3

Tex  
\$400,0  
Vir  
Mulle  
Jon  
Proj.  
excav  
over  
000 1

Va.  
Mulle  
ing a  
We

Tex  
decki  
for 1  
and 3

Tex  
\$400,0  
Vir  
Mulle  
Jon  
Proj.  
excav  
over  
000 1

Va.  
Mulle  
ing a  
We

Tex  
decki  
for 1  
and 3

Tex  
\$400,0  
Vir  
Mulle  
Jon  
Proj.  
excav  
over  
000 1

Va.  
Mulle  
ing a  
We

Tex  
decki  
for 1  
and 3

Tex  
\$400,0  
Vir  
Mulle  
Jon  
Proj.  
excav  
over  
000 1

Va.  
Mulle  
ing a  
We

Tex  
decki  
for 1  
and 3

Tex  
\$400,0  
Vir  
Mulle  
Jon  
Proj.  
excav  
over  
000 1

Va.  
Mulle  
ing a  
We

Tex  
decki  
for 1  
and 3

Tex  
\$400,0  
Vir  
Mulle  
Jon  
Proj.  
excav  
over  
000 1

Va.  
Mulle  
ing a  
We

Tex  
decki  
for 1  
and 3

Tex  
\$400,0  
Vir  
Mulle  
Jon  
Proj.  
excav  
over  
000 1

Va.  
Mulle  
ing a  
We

January 7, 1932

## CONSTRUCTION DEPARTMENT

58c

1.48 mi. gravel, Compton road, end SM-52, near Compton, to St. Francis Xavier Church, SM-87-84.

**MARYLAND**—State Roads Comsn., L. H. Steuart, Sec., has low bids for 2 roads:

**Baltimore City**—0.60 mi. sheet asphalt, Patapsco Ave., Brooklyn Ave. to Pennington Ave., BC-111-74, P. Flanigan & Sons, Inc., Harford Road and B. & O. R. R., Baltimore, \$54,391;

**Calvert County**—2.69 mi. gravel, Prince Frederick toward Dare's Wharf, C-42-84, Caton Construction Co., Halethorpe, \$14,679.

Md., Baltimore—City, George Cobb, Highways Engr., plans letting contracts in near future for several paving projects; State Roads Comsn., L. H. Steuart, Sec., pave Loney's Lane, which is to be known as Edison Blvd., and continue improvements on Patapsco Ave., Brooklyn; State Roads Comsn. expend approx. \$1,000,000 in city in 1932.

N. C., Asheville—City, R. W. Riggsby, City Mgr., plans widening Patton Ave. 10 ft.

**TEXAS**—State Highway Comsn., Gibb Gillchrist, Highway Engr., Austin, considering 14 roads, for Jan. 18 and 19 letting, in following counties:

**Austin**—12.627 mi. grading, draining, Highway 36, 6 mi. south of Sealy to 6 mi. north of Sealy, S 531-B;

**Brazos**—2.340 mi. grading, draining, Highway 21, Burleson County line to point 2,840 mi. northeast (Brazos River bottom), F 620-C;

**Concho**—17,007 mi. grading, draininf, caliche base with bitum. surface treatment, Highway 9, Tom Green County line to 2.8 mi. west of Eden, F 626-3 & B;

**DeWitt**—7,041 mi. caliche and crushed limestone base courses, Highway 119, S 835-B&C;

**Freestone**—4.621 mi. grading, draining, Highway 43, Leon County line northeast to connection with Highway 7, F 433-B;

**Hill**—14,670 mi. gravel base course, Highway 18, Turkey northeast to Road Dist. No. 4 line, F 602-A;

**Jim Wells**—21,272 mi. caliche base course, Highway 66, Live Oak County line to Alice, S 931-F;

**King**—15,323 mi. grading, draining, Highway 4, Guthrie south to Stonewall County line, S 854-E;

**Pecos**—9,999 mi. grading, draining Highway 27, 10 mi. west of Sheffield to Sheffield, F 618-F; 10,999 mi. grading, draining, Highway 27, 50 mi. east of Fort Stockton to 10 mi. west of Sheffield, F 618-E;

**Real**—7,046 mi. grading, draining, Uvalde County line north to Leakey, S 986-C;

**San Patricio**—10,524 mi. grading, draining, Highway 9, Nueces River bridge near Calallen to 10.5 mi. northwest, S 886-F;

**San Patricio**—10,524 mi. grading, draining, Highway 4, Aspermont north to King County line, S 854-F;

**Upton**—10,471 mi. caliche base course with bitum. surface treatment, Highway 99, S 903-H.

**TEXAS**—State Highway Comsn., Gibb Gillchrist, Highway Engr., Austin, plans 3 roads in following counties:

**Wharton**—4,975 mi. rein. conc. pavement, Highway 71, El Campo to Colorado County line, SAP 945-A, Unit 2, \$237,400;

**Tyler**—8,269 mi. grading, draining, Highway 40, Neches River bridge to Colmismile, FAP 606-C, Unit 1, \$43,500;

**Hill**—16,47 mi. gravel base course, 20 ft., with triple bitum. surfacing, 19 ft., Highway 18, Turkey northeast to Stonewall line, FAP 602-A, Unit 2, \$130,300.

**Tex., Brady**—McCulloch County Comms., Brady, and State Highway Comsn., Gibb Gillchrist, Highway Engr., Austin, plan 21 mi. all-weather road, Highway 107, Brady to Coleman County line.

**Tex., Brownsville**—City plans widening streets as part of 1932 improvement and beautification program.

**Tex., Galveston**—Galveston County, I. Predecki, County Aud., call for bids at once for 1-in. topping Seawall Blvd. between 18th and 39th Sts.

**Tex., Perryton**—Ochiltree County voted \$400,000 road bonds.

**Virginia**—State Dept. of Highways, C. S. Mullens, Ch. Engr., Richmond, opens bids Jan. 12 for 3,089 mi. gravel, Route 725, Proj. 742, Fairfax County, 32,515 cu. yd. excavation, 14,977 cu. yd. gravel, bridge over Dogue Creek, 25,790 lb. rein. steel, 47,000 lb. struc. steel, 2480 lin. ft. piles.

**Va., Richmond**—City, R. Keith Compton, Dir. Public Works, expend \$100,000 for paving and \$100,000 for curbing, guttering, grading and graveling in 1932.

**West Virginia**—See Bridges, Culverts and Viaducts.

## Contracts Awarded

**MISSISSIPPI**—State Highway Comsn., C. M. Williamson, Dir., Jackson, let contracts for 3 roads in following counties:

**Lauderdale**—2,178 mi. Meridian-Hattiesburg road, Proj. 180-C, W. R. Fairchild, Seminary, \$20,706;

**Adams**—0.658 mi. Natchez-Woodville road, Proj. 218-A, W. R. Fairchild, \$29,601;

**Leflore**—North approach to Yazoo River bridge, State Proj. 1008, Harbert-Cargile Construction Co., 2212 20th Ave., S., Birmingham, Ala., \$2210.

12-24

Miss., Jackson—State Highway Comsn., C. M. Williamson, Dir., let contracts for supplies and services for maintenance work for next 6 months, involving approx. \$400,000: Creosoted lumber and ties, T. J. Moss Tie Co., Columbus; Republic Creosoting Co., South End Water St., Mobile, Ala.; Ayer & Lord Tie Co., Exch. Bldg., Memphis, Tenn.; Gulfport Creosoting Co., Gulfport; American Creosote Works, 1305 Dublin St., New Orleans, La.; paints and varnish, Sherwin-Williams Co., Jackson; White Co., 3200 E. Biddle St., Baltimore, Md.; Benson Paint & Varnish Co., 3601 10th Ave., N., Birmingham, Ala.; gravel hauling, B. G. Coggins, Nettleton; W. W. Burke, Philadelphia, Miss.; E. E. Lovell; auto tires and tubes, U. S. Rubber Co., Inc., 202 Fulton St., New Orleans; Goodyear Tire & Rubber Co., Dayton, Ohio; Firestone Tire & Rubber Co., Akron, Ohio; Seiberling Rubber Co., Akron, Ohio.

12-17

Mo., Clayton, St. Louis—St. Louis County, Ry Jablonsky, Highway Engr., let contract to Webb-Boone, 5103 Fyler Ave., St. Louis, at \$61,760, for 10-ft. rein. conc. pavement on each side of 20-ft. bitum. macad. pavement, 8172 ft.

12-17

Tex., Austin—City, Adam R. Johnson, City Mgr., let contract to Brown & Root for conc. curb and gutter, grading, gravel base course and double bitum. surface treatment on driveways, Fruth Park; Orin E. Metcalfe, City Engr.

12-24

## Sewer Construction

**Sewer construction in LAND DEVELOPMENT** projects involves the expenditure of large sums of money. Under that classification details of these improvements are reported.

La., New Orleans—Southern Scrap Material Co., 4144 Bienville St., New Orleans, reported, low bidder for furnishing 1500 kw. turbo generator for Sewerage and Water Bd.

Md., Baltimore—Marocco Constrn. Co., 231 S. Exeter St., reported, low bidder at \$25,550 for sewers, Sanitary Contr. 281.

12-24

Md., Baltimore—See Want Section—Bids asckd.

Md., Chestertown—City, reported, plans sewage disposal plant; conc. and steel; 1 story.

Mo., Springfield—City defeated \$200,000 bonds issue for sewers.

12-10

Mo., St. Louis—Bd. of Public Service receives bids Jan. 19 for Sec. A-2, Maline Creek Public Sewer, foul water sewer below Maline Creek channel from Mississippi River to water works conduit right of way; work includes 1900 ft. 42-in. mono. conc. or rein. conc. pipe or 45-in. brick sewer; cost \$17,000; W. W. Horner, City Engr.

N. C., Charlotte—See Want Section—Bids Asked.

Tenn., Nashville—Bd. of Public Works, reported, adopted resolution for construction 5 sewer projects.

Tex., Austin—University of Texas, Judge R. L. White, Chmn. Bd. of Regents, receives bids Jan. 29 for storm sewers, 1000 ft. long, 42-in. in diam.; R. L. White, Supvg. Archt., University of Texas.

Tex., Houston—City, G. L. Fugate, Prince Ass't. Engr., reported, preparing plans for constructing \$1,000,000 sewage disposal plant on 20 acre site at Simms Bayou and LaPorte Rd. to serve East End area; daily capacity 12,500,000 gal. sewage; bonds not voted; also preparing plans for laying sanitary sewer main connecting South Side and proposed East End plant, main 6½ miles long, cost \$400,000; bonds available for this work; contract let for drainage facilities on W. Main from Airline Rd. to 20th and on 20th from N. Main to Rutland, cost \$50,000; construction to start early in 1932; plans Calhoun St. storm sewer between St. Bernard and Live Oak Sts.

Va., Lynchburg—City, R. W. B. Hart, City Mgr., plans constructing sewer in Dearington.

Va., Richmond—Street Committee recommended to Common Council bond issue of \$400,000 for sewer construction; R. Keith Compton, Director of Public Works.

Va., Richmond—City, reported, plans expending \$900,000 in 1932 on street and sewer construction.

## Telephone and Radio

Ala., Mobile—U. S. Dept. of Commerce, Oscar N. Barney, Airport Supt., reported, soon begin work on airways radio station on 11 acre site at Military and Pine Crest Rds.; cost \$40,000.

Miss., Ripley—Southern Bell Telephone & Telegraph Co., Atlanta, Ga., reported, negotiating for local telephone system of Mississippi Telephone Co., operates in number of towns between Ripley and Philadelphia, Miss.

Va., Richmond—Chesapeake & Potomac Telephone Co. of Virginia, reported, plans pole replacement in Midlothian, Provost and Ellerson central office area and on Richmond-Barbourville long distance line; projects are included in \$505,925 expenditures authorized in state.

## Water Works

**Details of water works improvements in connection with the many LAND DEVELOPMENT operations will be found under that Classification.**

Ga., Savannah Beach—Savannah Beach Water Works, Perry Solomon, Jr., Mgr., reported, plans improving water system.

Mo., Illinois—City votes Jan. 12 on \$45,000 bonds for water works system; erect pumping plant; install pumps; Caldwell Engineering Co., Jacksonville, Ill., Engr.

Mo., Marshall—Lakeside Eng. Corp., 176 W. Williams St., Chicago, Ill., reported, has contract for equipment for city water softener plant; cost \$30,000.

Okla., Kingfisher—Cities Water Co., reported, offered to sell water system to city; if purchased, city will probably vote on \$87,000 bonds.

W. Va., Clarksburg—American Water Softener Co., Fourth St. and Lehigh Ave., Philadelphia, Pa., reported, has contract to re-vamp and rehabilitate filtration plant for Clarksburg Water Bd.

W. Va., Clarksburg—Clarksburg Water Bd., reported, acquired site adjoining equalizing reservoir S. Chestnut St., for possible expansion.

## Woodworking Plants

Fla., Marianna—Cecil Rhyne & Co., incorporated; C. Rhyne.

N. C., Gastonia—Lakeside Furniture Co., capital \$50,000, incorporated; G. M. Byrd, Darlington, S. C.

N. C., Marion—F. O. Huffman, Morganton, and B. B. Crisp, Marion, reported, acquired Teague Furniture Co., and Marion Veneer and Panel Co., subject to confirmation by Superior Court.

N. C., High Point—Veneer Dimensions, Inc., chartered; J. G. Laws, 2940 Independent St., Baltimore, Md.

## FIRE DAMAGE

Ala., Bridgeport—Hudson Bldg., occupied in part by R. K. Barnes' grocery, L. G. Hughes' furniture store and John Tanner's drug store; loss \$40,000 to \$50,000.

Ala., Mobile—St. Andrew Hotel; loss \$15,000.

Ga., Moultrie—Farmers' Warehouse; loss \$40,000.

Ga., Perry—Colonial Apts., Fort Valley Rd.; Rev. W. K. Dennis and N. G. Edwards, members; loss \$9000.

Ga., Sparta—Sparta Billiard Parlor and Bowers' Cafe, both owned by Saml. Ohlman; Brown Hardware Co.

Ky., Indian Fields—A. A. Clay & Son's general store.

La., Lake Charles—Frank Hebert's residence, Louis St.

La., New Orleans—Portion of Klinger Umbrella Mfg. Co., Inc., 124 Chartres St.; loss \$19,000.

Md., Baltimore—The Shoe Shop, 207 N. Eutaw St., Sol Swerdlow, owner; loss \$12,000 to \$15,000.

Md., Chestertown—Farmers' Co-Operative Cannery at Fairlee; loss \$26,000.

Md., La Plata—Two tobacco barns, ice house, corn house, wagon shed, etc., on farm of Jos. and Geo. Bowling near La Plata.

Miss., Handsboro—Philip F. Martin's residence; loss \$12,000.

Miss., Pelahatchie—Dry kiln of Pelahatchie Lumber Co.; loss \$20,000.

Miss., Webb—Mrs. B. L. Neal's residence, Highway No. 49; loss \$20,000.

Mo., St. Louis—Maj. Norman B. Comfort's residence, 4 Picardy Lane, LaDue Village, St. Louis County; loss \$35,000.

N. C., Goldsboro—Unoccupied dwelling near Rosewood, owned by Ralph Sasser, Goldsboro; loss \$6000.

N. C., Reidsville—Brown's Tobacco Warehouse.

S. C., Chester—Paul L. Coogler Bldg., occupied by Chester Furniture Co., Blaine's Feed Store and Coogler's storage dept. and offices; loss \$12,000.

Tenn., Johnson City—Portion of plant of Union Printing Co., 121 Spring St.

Tex., El Paso—Lone Star Furniture Co.'s bldg., 601-07 E. San Antonio St.

Tex., Jourdanton—E. H. Pfeil's residence. Tex., Mabank—A. G. Gardner's residence. Tex., Mineola—Beckham Hotel; loss about \$40,000.

Tex., Prairie Lea—W. M. White's barber shop and cleaning plant.

Tex., San Angelo—Findlater Hardware Co.'s bldg., 207-09 S. Chadbourne St.; Mark Findlater, Vice Pres.-Mgr.; loss \$100,000.

Va., Barboursville—Dr. J. O. Mundys residence; loss \$10,000.

Va., Fredericksburg—Two barns on Sherwood Forest Farm near Fredericksburg, owned by John L. Pratt, Vice-Pres., General Motors Corp., Detroit, Mich.

Va., Wytheville—Grant Lawson's residence, Lee Highway, East Wytheville.

W. Va., Charles Town—Richard Moler's farm bldgs., Mechanicstown.

W. Va., Huntington—Portion of building of Case Auto Laundry, 410 Fourth St., owned by F. F. Starcher, 826½ Sixth Ave.

W. Va., Philippi—Geo. Waddell's residence; loss \$50,000, including furnishings.

D. C., Washington—Dist. Comms., Dist. Bldg., have low bid at \$28,680 from Fidelity Construction Co., Inc., for sheds, Farmers Market.

D. C., Washington—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, opens bids Jan. 13 for foundations for \$8,750,000 Archives Bldg., Pennsylvania Ave., L. Seventh and Ninth Sts.; structure fireproof, stone, 7 stories; John Russell Pope, Archt., 542 Fifth Ave.; H. G. Balcom, Engr., 10 E. 47th St.; Clyde R. Place, Mech. Engr., 420 Lexington Ave., all New York; preliminary excavation previously noted let.

D. C., Washington—Additional prospective estimators on \$6,500,000 addition to Library of Congress, bids Jan. 12 by Architect of the Capitol: R. P. Whitty Co., Inc., Denrike Bldg.; Chas. H. Tompkins Co., 1608 K St., N. W., both Washington; Wark Co., 1608 Walnut St.; Ralph S. Herzog, 10 S. 18th St.; Edw. J. Wander, 4312 Bellevue Ave., all Philadelphia, Pa.; Paschen Bros., 33 N. LaSalle St.; W. E. O'Neill Construction Co., 308 W. Washington St., both Chicago, Ill.; Fredburn Construction Co., 60 E. 42nd St., New York; A. W. Kutsche & Co., 2111 Woodward Bldg., Detroit, Mich.

D. C., Washington—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., has low bid at \$57,700 from United Metal Products Co., Canton, O., for partitions in Dept. of Agriculture extensible bldg.; low bid at \$24,000 from Pearson-Regnell Co., Muskegon, Mich., for painting plaster, etc.

Fla., Daytona Beach—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, probably call for bids in Feb. for \$25,000 post office; Harry M. Griffin, Archt., 309 N. Grandview Ave., Daytona Beach.

Ga., Americus—Additional prospective estimators on extension and remodeling of post office, court house, etc., bids Jan. 11 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington: May Construction Co., Arcade Bldg., Columbia, S. C.; Earl E. Barber & Co., 203 W. Fourth St., Bethlehem, Pa.; Theriault Contracting Co., 534 E. Johnson St., Philadelphia, Pa.; H. H. Brown, Dothan, Ala.; Noyes, Roach & Co., 915 Olive St., St. Louis, Mo.; River E. Worrell, 101 E. 40th St., Savannah, Ga.; Jones Bros. & Co., Box 1454, Wilson, N. C.; Kent Construction Co., Amerleus; A. C. Knight, Albany, Ga.; Samford Bros., Inc., 301 Washington Ave., Montgomery, Ala.; Murphy Pound, Box 422, Columbus, Ga.; J. N. Raymond Construction Co., Atlanta Natl. Bank Bldg.; O. P. Woodcock Co., Duval Bldg., both Jacksonville, Fla.; Batson-Cook Co., Inc., West Point, Ga.; N. C. Hinton, Sixth and Wall Sts., Cordele, Ga.; General Engineering Corp., McClatchy Bldg., Upper Darby, Pa.; Wm. P. Francis, 201 Luckie St., N. W.; J. S. McCauley Co., Bon Allen Bldg.; Flagler Co.; Barge-Thompson Co., 136 Ellis St.; Grahn Construction Co., Red Rock Bldg., all Atlanta, Ga.

Ga., Atlanta—Enterprise Co., Inc., Box 298, Norfolk, Va., estimating on plumbing and heating work for superstructure of \$1,500,000 post office and Federal bldg., bids Jan. 12 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington.

Ga., Atlanta—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, has low bid at \$35,000 from Otis Elevator Co., 810 18th St., N. W., Washington, for elevator plant for \$1,500,000 post office.

La., Alexandria—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, approved preliminary plans for \$275,000 post office and court house; Edw. F. Neild, Archt., City Bk. Bldg., Shreveport.

N. C., Durham—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, approved sketches for \$360,000 Federal bldg., E. Chapel Hill St. and Rigsbee Ave.; Atwood & Weeks, Inc., Archts., Chapel Hill, N. C.

N. C., Gastonia—State Highway Coms., Raleigh, plans 100-man prison camp in Gaston County; \$15,000 to \$20,000, brick, 3 stories.

N. C., Greensboro—Additional prospective estimators on post office lighting fixtures, bids Jan. 7 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington: Perfecite Co., 1457 E. 40th St., Cleveland, O.; Tioga Contracting Co., 921 W. Tioga St., Philadelphia, Pa.; Q. R. Evans & Bro., Inc., 1328 I St., N. W., Washington; Reading Chandelier Works, 503 Penn St., Reading, Pa.; Ferro-Art Lighting Fixture Co., 12 Vestry St.; Cassidy & Co., Inc., 101 Park Ave., both New York; Guilford Electrical Co., 216 W. Market St.; Thompson, Inc., 222 S. Greene St., both Greensboro.

Ola., Miami—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, probably not call for bids before Feb. 15 for \$235,000 post office and Federal bldg., A St. and First Ave., N. E.

## BUILDING NEWS

### BUILDINGS PROPOSED

#### Association and Fraternal

La., New Orleans—Knights of Columbus, Chas. A. Ahern, Grand Knight, plans \$450,000 lodge and hotel bldg., Carondelet St., near Julia St.; rein. conc., brick and steel, U shape, 8 stories and basement, 150x160x40 ft., tile and terrazzo floors, cast stone trim, steam heat, ventilating system, elec. passenger elevators; 25x75-ft. swimming pool, 6 bowling alleys, hand ball courts, roof garden, club rooms, 100 hotel rooms, 4 stores; Geo. R. Bartling, Inc., Archts., 802 Paul Brown Bldg.; L. M. Dieckmeyer, Const. Engr., Ambassador Bldg., both St. Louis, Mo.

Miss., Bay Springs—Ancient Free and Accepted Masons request permission of Mayor and Bd. of Aldermen to erect second story to town hall for lodge quarters; brick.

#### Churches

Ga., Vidalia—Baptist Church alter and enlarge church and Sunday school; brick, comp. root; F. Arthur Hazard, Archt., Augusta; soon ready for bids.

S. C., Greenville—Mills Mill Baptist Church, Rev. M. A. Kizer, Pastor, raising funds for brick veneer bldg.: hope to break ground about Feb. 15.

#### City and County

La., New Orleans—City Coms. Council has low bid at \$59,100 from Chas. Gilbert Construction Co., Inc., Amer. Bk. Bldg., for St. Bernard Market; Sam Stone, Jr., & Co., Archts., Masonic Temple Bldg.

La., New Orleans—City Coms. Council about ready for bids for alterations to Jefferson Market, Magazine and Gen. Pershing Sts.; exterior changes, new stalls, conc. and tile floors, screens, lighting fixtures, refrigeration, tile work, plumbing, wiring, etc.; Sam Stone, Jr., & Co., Archts., Masonic Temple Bldg.

Mo., St. Louis—Bd. of Public Service opens bids Jan. 19 for comfort station, Fairgrounds Park; \$22,000, brick and conc.; W. W. Horner, City Engr.

Tex., Houston—Town of University Place, H. B. Schlesinger, Mayor, plans election on \$40,000 city hall bonds early in year.

#### Dwellings

Ga., St. Simons Island—John E. Smith, 66 Westminster Drive, N. E., Atlanta, erect tile, brick and stucco residence; 2 stories, hard wood and tile floors, conc. foundation; Pringle & Smith, Archts., 1010 Norris Bldg., Atlanta; soon ready for bids.

La., New Orleans—Adam W. Diermann, 1331 St. Anthony St., considers erecting 2 dwellings, Acacia St. and Frank Ave.; work probably start in 5 or 6 months.

Md., Reisterstown—Dr. Jas. G. Saffell receiving bids, no definite date, for stone residence; 2½ stories, 75x50 ft.; I. M. Myers, Archt., Hanover, Pa.; C. W. Littleton & Sons, 4313 Liberty Heights Ave., Baltimore, estimating.

#### Government and State

Ark.-Tex., Texarkana—Additional prospective estimators on \$790,000 post office and Federal bldg., bids Jan. 11 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington: General—Holmboe Construction Co., Petroleum Bldg.; Harmon & Mattison Construction Co., Insurance Bldg., both Oklahoma City, Okla.; Libbey & Libby Co., 244 Second Ave., S.; Phelps-Drake Co., Inc., Metropolitan Life Bldg.; Ring Construction Co., Wesley Temple Bldg., all Minneapolis, Minn.; Yeager & Sons, Danville, Ill.; Nathan Wohlfeld, Constr. Bldg.; A. J. Rife Construction Co., 1913 N. Harwood St., both Dallas, Tex.; W. B. Smith, Box 727, El Dorado, Ark.; Spence Bros., Brewer Arcade, Saginaw, Mich.; R. F. Ball Construction Co., Electric Bldg., Fort Worth, Tex.; Jas. DeVault, Massillon Rd., Canton, O.; R. P. Farnsworth & Co., Inc., Maritime Bldg.; O. M. Gwin Construction Co., 3503 Fern St., both New Orleans, La.; Don J. Byrum, 40 Haddad Ave., Wheeling, W. Va.; H. G. Christman & Co., South Bend, Ind.; United Construction Co., Washington; W. H. Horster, Exch. Natl. Bank, Tulsa, Okla.; Brasted Co., 452 N. Main St., Wichita, Kan.; A. W. Kutsche & Co., 2111 Woodward Ave., Detroit, Mich.; C. E. Mumford, Box 182, Fairmont, W. Va.; Ed S. Moore & Son, 610 N. Washington Ave., Kokomo, Ind.; Missouri Valley Bridge & Iron Co., Leavenworth, Kan.; C. M. Construction Co., 236 S. Buchanan St., Edwardsville, Ill. Elevators—Wm. Grohne, 217 Farragut Place, Joliet, Ill.; Warner Elevator Manufacturing Co., Cincinnati, O.

D. C., Washington—Prospective estimators on 1 Air Corps barracks, Bolling Field, Anacostia, bids Jan. 28 by Constructing Quartermaster: Lee Paschall; Allen J. Saville, Inc., Electric Bldg.; Miller Manufacturing Co., Inc., 600 Seventh St.; Ben Pillow, Sixth & Franklin Sts., all of Richmond, Va.; Nicholas Co., 4848 Lancaster Ave.; Ralph S. Herzog, 10 S. 18th St., both of Philadelphia, Pa.; Consolidated Supply Co., Inc., 1102 N. Charles St.; Fidelity Engineering Corp., Belair Rd., both of Baltimore, Md.; Brooklyn & Queens Screen Manufacturing Co., Inc., Hempstead, Long Island, N. Y.; Levene Electric Co., New Rochelle, N. Y.; Arthur L. Smith & Co., 2539 Pennsylvania Ave.; Geo. E. Wyne, 2539 Pennsylvania Ave., N. W.; Ed. L. Stock, 1716 H St., N. W.; United Construction Co., Munsey Bldg.; John W. Cowper Co., Natl. Press Bldg.; D. C. Engineering Co., 1400 Spring Rd., N. W.; Truscon Steel Co., Hill Bldg.; Geo. Hyman Construction Co., 1010 Vermont Ave., N. W.; Crane Co., 1225 I St., N. W.; Skinner & Garrett, 1719 I St., N. W.; Boyle-Robertson, Inc., Evans Bldg., all Washington; W. S. Barstow & Co., Reading, Pa.; Cut Stone Association of Indiana, Bloomington, Ind.; Ingalls Stone Co.; Indiana Limestone Co., both Bedford, Ind.; A. Lloyd Goode, Inc., 328½ N. Tryon St.; Goode Construction Co., P. O. Box 1266, both Charlotte, N. C.; M. H. Sobel Co., Book Tower, Detroit, Mich.; Pease Co., Mitchell Ave. and B. & O. R. R., Cincinnati, O.; Nicola Building Co., East Liberty, Pittsburgh, Pa.; Enterprise Co., Inc., Norfolk, Va.; Worsham Bros., Medical Arts Bldg., Knoxville, Tenn.

Ga., Atlanta—Enterprise Co., Inc., Box 298, Norfolk, Va., estimating on plumbing and heating work for superstructure of \$1,500,000 post office and Federal bldg., bids Jan. 12 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington.

Ga., Atlanta—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, has low bid at \$35,000 from Otis Elevator Co., 810 18th St., N. W., Washington, for elevator plant for \$1,500,000 post office.

La., Alexandria—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, approved preliminary plans for \$275,000 post office and court house; Edw. F. Neild, Archt., City Bk. Bldg., Shreveport.

N. C., Durham—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, approved sketches for \$360,000 Federal bldg., E. Chapel Hill St. and Rigsbee Ave.; Atwood & Weeks, Inc., Archts., Chapel Hill, N. C.

N. C., Gastonia—State Highway Coms., Raleigh, plans 100-man prison camp in Gaston County; \$15,000 to \$20,000, brick, 3 stories.

N. C., Greensboro—Additional prospective estimators on post office lighting fixtures, bids Jan. 7 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington: Perfecite Co., 1457 E. 40th St., Cleveland, O.; Tioga Contracting Co., 921 W. Tioga St., Philadelphia, Pa.; Q. R. Evans & Bro., Inc., 1328 I St., N. W., Washington; Reading Chandelier Works, 503 Penn St., Reading, Pa.; Ferro-Art Lighting Fixture Co., 12 Vestry St.; Cassidy & Co., Inc., 101 Park Ave., both New York; Guilford Electrical Co., 216 W. Market St.; Thompson, Inc., 222 S. Greene St., both Greensboro.

Ola., Miami—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, probably not call for bids before Feb. 15 for \$235,000 post office and Federal bldg., A St. and First Ave., N. E.

January 7, 1932

## CONSTRUCTION DEPARTMENT

59

Dist.  
Fidelity  
Farmers  
12-24  
t., Jas.  
ashings-  
ons for  
a Ave,  
re fire-  
Russell  
Balcom,  
Mech.  
York;  
eted let.  
9-3  
pective  
Library  
tect of  
Den.  
1608 K  
o., 1608  
S. 18th  
v Ave.,  
33 N.  
on Co.,  
o., Ill.;  
nd St.,  
Wood-  
12-31  
t., Jas.  
as low  
dpt. of  
at \$24,  
ekegon,  
t., Jas.  
shing-  
\$285,-  
nt., 300  
7-16  
e esti-  
of post  
Treas-  
Supvg.  
n Co.,  
n. Gar-  
lehem,  
John-  
Brown,  
Olive  
101 E.  
x 422,  
ction  
Wood-  
ville,  
, Ga.;  
ordale,  
atchy-  
francis,  
y Co.,  
ompson-  
12-31  
x 298,  
and  
500-  
Jan.  
Act.  
12-31  
Wet-  
n., has  
r Co.,  
ovator  
12-31  
s. A.  
ington,  
post  
rcht.  
9-24  
s. A.  
ington,  
bldg.,  
; At-  
Hill,  
11-19  
msn.,  
Gas-  
3 sto-  
10-29  
ective  
tures.  
Wet-  
Per-  
O.;  
St.,  
Inc.  
ding  
ding,  
Ves-  
Ave.,  
216  
rene  
12-31  
Wet-  
prob-  
for  
A St.  
4-23

Okla., Okmulgee—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, has low bid at \$228,238 from Algernon Blair, First Natl. Bk. Bldg., Montgomery, Ala., for post office, court house, etc.; low bid at \$8617 from Otis Elevator Co., 810 18th St., N. W., Washington, for elevators. 12-24

Tex., Randolph Field—Constructing Quartermaster, Fort Sam Houston, opens bids Jan. 22 for cooling system for administration bldg. 12-24

Va., Hampton Roads, Norfolk—Navy Dept., Bureau of Yards and Docks, Washington, has low bid at \$16,940 from Virginia Engineering Co., Inc., First Natl. Bk. Bldg., Newport News, Va., for administration bldg., Naval Operating Base, Air Station. 12-24

## Hospitals, Sanitariums, Etc.

Ga., Augusta—Veterans Administration, Arlington Bldg., Washington, reported, erect 30-car garage, Veterans Administration Hospital; conc. foundation, stucco and hollow tile, 1 story. 12-24

Tex., San Angelo—Estate of Mrs. Margaret A. Shannon, N. E. Jackson, Atty., to erect \$1,500,000 to \$2,000,000 hospital; Dr. J. S. Hixson, 111 E. Harris St., is chmn. of board of trustees to administer fund. 12-24

Va., Norfolk—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, call for bids early in year for \$850,000 Public Health Service Hospital, Hampton Blvd.; about 183 beds. 9-24

## Hotels and Apartments

D. C., Washington—A. G. Keyser, care Henrich Realty Co., 1410 G St., repair Franklin Hotel, damaged by fire; Mutual Fire Insurance Co., 1301 H St., receiving bids. 12-24

Ga., Augusta—H. P. Burum, 2306 Walton Way; \$500,000 hotel; Scroggs & Ewing, Archts., S. F. C. Bldg.; revising plans; probably several weeks before contract is let; may not take competitive bids. 11-12

Va., Cape Charles—H. F. Bonniville has low bid at \$25,450 from C. H. Legg, Cape Charles, for hotel; H. Robt. Diehl, Archt., 717 W. 35th St., Norfolk. 12-24

## Miscellaneous

Tex., San Antonio—Packing House Market, 1009 E. Commerce St., Wm. and Aug. Roeglein, owners, erect rear addition; structural tile and stucco, rein. conc. foundation, 1 story, about 100x38 ft., conc. floor, tar, paper and gravel built-up roof; M. L. Diver, Engr., 2676 Avenue B; Floyd Freedland; Supt. of Constr.; plumbing, heating and wiring let. 12-31

## Schools

Ky., Lexington—Fayette High School Co., incorporated, Mrs. Lenah B. Hanson, Lawrence K. Shropshire, and others, members, to assist Fayette County Bd. of Education to finance school, Eastin Rd.; \$65,000 or more; probably let contract in Jan. 12-31

La., Jonesboro and Hodge—Prospective estimators on \$100,000 high school at Jonesboro, bids Jan. 13 by Jackson Parish School Bd.: General—W. C. Salley; W. H. Blane; Lee Ellis; Frank Masling, all Monroe; P. Olivier & Son, Inc., Lake Charles; John C. Corbin, Napoleonville; McBride Construction Co., Bastrop; E. E. Rabalais & Son, Bunkie; W. J. Quick, New Orleans; Tudor & Ratcliff, Alexandria; McMichael Construction Co., Shreveport; Clifford H. King, Baton Rouge; R. L. Roland & Sons, Crowley; Plumbing and Heating—Preston Brasher, Alexandria; Craft Rushworth, Lake Charles; L. M. Harper, Pineville; W. J. Riley; P. H. Owen, both Monroe; Barrow Heating Co. 12-31

664 Herndon Ave., Shreveport; J. W. Smith & Associates, Archts., Ouachita Natl. Bk. Bldg., Monroe. Above general contractors, with the addition of the following, estimating on \$45,000 grammar school at Hodge, bids same date: F. D. Welch, 940 Elmwood Ave.; K. C. Wilson, Slattery Bldg., both Shreveport; C. G. Kershaw Contracting Co., Crowley; E. E. Rabalais & Son, Bunkie; O. M. Houck, Simsboro; Pesnell Bros., Ruston; Edw. F. Neild, Archt., City Bank Bldg., Shreveport. 12-3 and 11-19

La., Maurepas—Livingston Parish School Bd., H. L. Rogers, Sec., Denham Springs, selected Wm. R. Burk, Balter Bldg., New Orleans, as architect for \$25,000 addition to high school; alter present structure; frame and stucco, 1 story and basement, 40x60 ft., comp. and tile roof, rein. conc. foundation, wood floors, sheet metal work, blackboards, steam heat; plans ready in about 60 days. 12-31

La., New Orleans—Most Holy Name of Jesus Congregation opens bids Jan. 14 for

\$200,000 parochial school, Cromwell Place near Calhoun St.; fireproof, brick, stone trim, 3 stories, 228x62 ft., 67x46-ft. auditorium wing, 24 classrooms, cafeteria, lavatories, recreational quarters; Rathbone DeBuys, Archt., Hibernalia Bk. Bldg.; E. A. Christy, Consit. Archt.; following contractors estimating: Lionel F. Favret, 937 Gravos St.; Gervais F. Favret, Balter Bldg.; O. M. Gwin Construction Co., 3503 Fern St.; Alvin M. Fromherz, Q. & C. Bldg.; R. P. Farnsworth & Co., Maritime Bldg.; H. Pratt Farnsworth, Canal Bk. Bldg.; Caldwell Bros., 816 Howard St. 11-19

Md., Baltimore—Bd. of Awards rejected bids for public address system in Polytechnic Institute auditorium; call revised bids. 12-24

Md., Bethesda—Montgomery County Bd. of Education, Rockville, let contract at \$14,000 to A. C. Warthen & Sons, Kensington, Md., for kindergarten; conc. and brick, 25x69 ft., conc. and linoleum floors, conc. foundation, built-up roof, ventilators, cast stone; Howard W. Cutler, Archt., 1108 16th St., N. W., Washington; W. I. Collier & Co., Engrs., 522 Park Ave., Baltimore, Md. 12-10

S. C., Columbia—Benedict College, Harden St., Dr. J. J. Starks, Pres., soon start work on \$50,000 auditorium. 12-24

## BUILDING CONTRACTS AWARDED

## Bank and Office

Tex., San Benito—San Benito Bank & Trust Co. started work on remodeling bldg.; change entrance; new floor, new fixtures; McMillan Construction Co., Contr. 12-24

## Churches

La., Monroe—First Baptist Church will let contract at \$97,000 to Frank Masling, P. O. Box 367, for Sunday school addition; fireproof, 4 stories, 67.8x109.6 ft., terrazzo, tile and comp. floors, conc. foundation, marble, metal doors, limestone, built-up 20 yr. bonded roof, steel sash and trim, hollow tile, vault door; address proposals on furnishings, equipment, etc., \$20,000, to L. A. Stulse, care church; Love & Barr, Archts.-Engrs., 6th floor, Bernhard Bldg.; financing. See Want Section—Building Material and Equipment. 12-31

## City and County

Fla., Tampa—Hillsborough County Comsn. let contract at \$4458 to W. P. Richardson Construction Co., Inc., 1003 W. Cass St., to remodel school for court house annex, and at \$7553 for alterations at court house; steam heat for annex, R. T. Joughin & Co., 1502 Franklin St., at \$2528; roof, Allen Roofing & Sheet Metal Works, Inc., 215 S. Rome Ave., at \$1684. 12-24

Miss., Monticello—Lawrence County Bd. of Supvrs. let contract at \$20,074 to McArthur & McLemore, 611-22nd Ave., Meridian, for court house repairs and alterations; rebuild second and third floors, new sidewalks, tile roof, cast stone work, steel trusses, copper gutters, brick work, acoustical equipment, kalamkin doors, wiring, elec. fixtures, plumbing, heating, metal and wood equipment, etc.; N. W. Overstreet, Archt., Standard Life Bldg., Jackson. 12-17

Okl., Pawnee—Acme Brick Co., Gillett Bldg., has brick contract for \$140,000 Pawnee County Court House; stone, Consolidated Cut Stone Co., 1323 E. Fifth St.; painting, R. M. Burchett, all Tulsa; steel, Truscon Steel Co., Magnolia Bldg., Oklahoma City; Smith & Senter, Archts., Philtower Bldg., Manhattan Construction Co., Contr., Philcade Bldg., both Tulsa. 12-24

Va., Lynchburg—City, R. W. B. Hart, City Mgr., let new contract at \$142,500 to C. L. Lewis, Krise Bldg., for armory-market, 13th and Main Sts.; heating, F. L. Watson, 214 10th St.; Johnson & Brannon, Archts., Peoples Natl. Bk. Bldg. 12-24

## Dwellings

D. C., Washington—Roseburn Corp., Stewart Bldg., Sixth and D Sts., erect 7 brick dwellings, 5519-29 Second St.; 2 stories, tin roofs, hot water heat; total \$36,000; owners build. 12-24

D. C., Washington—L. E. Breuninger & Sons, Inc., Investment Bldg., have permit for \$12,000 dwelling, 7614 Morningside Drive, N. W.; stone, brick and stucco, 2 stories; owners build. 12-24

D. C., Washington—Jacobson Bros., 1616 K St., N. W., erect 2 brick and frame dwellings, 3618-22 Jocelyn St.; 2 stories, slate roof, hot water heat; total \$14,000; owners build. 12-24

## Stores

Ga., Sparta—Sam'l. Ohlman plans bldg. to replace burned structure; brick, comp. roof; store, restaurant; constr. probably by owner. 12-24

Md., Baltimore—Abraham Green, 1617 E. Oliver St., erect bldg., Marmon Ave. near Belleville; brick, 3 stories, 30x44 ft.; 18x18-ft. garage; drawing plans. 12-24

W. Va., Slab Fork—Slab Fork Coal Co., W. Gaston Caperton, Pres., rebuild general store lately noted burned at \$50,000 loss; probably use own force; 1 story, 36x48 ft.; probably brick, hardwood floors, conc. or stone foundation, metal roof; plans by owner; Jas. H. Halstead, Engr., Beckley. 12-31

## Theatres

Md., Baltimore—Frank Price, Jr., 4302 Garrison Blvd., plans motion picture theater, 4607 Liberty Heights Ave.; permission to build not yet secured. 12-24

## Warehouses

Ga., Moultrie—Colquitt County Tobacco Warehouse Co., W. C. Vereen, Pres., erect \$30,000 tobacco warehouse; 45,000 sq. ft. 12-24

D. C., Washington—Lawrence Nelson, 5135 Seventh St., N. W., erect \$12,000 brick and hollow tile residence, 3412 Patterson St., N. W.; 2½ stories and basement, 34x27 ft., oak floors, tile bath, elec. refrigerator, built-in kitchen equipment; W. B. Honey, Archt., 1235 Morse St., N. E.; work by sub-contract. 12-24

Ga., Augusta—Mrs. Constance D. Lewis, Gardner St., let contract at \$17,180 to Sibert & Robison, Masonic Bldg., for frame residence; 2 stories, 30x40 ft., oak, linoleum and tile floors, slate roof, incinerator; Scroggs & Ewing, Archts., S. F. C. Bldg. 12-24

Ga., Decatur—Harold Rungar, 228 Fairview Ave., N. E., Atlanta, erect brick veneer residence; 2 stories and basement, conc. foundation, hardwood and tile floors, comp. steam heat; owner builds. 12-24

Ga., Moultrie—J. B. Shepard started work by day labor on brick residence; 2 stories and basement, conc. foundation, hardwood and tile floors, Alabama, Indiana limestone or cast stone, Johns-Manville asbestos or slate roof, tin and copper roofing, metal lath, Dexter ventilators, Majestic chute and dump; T. Firth Lockwood, Archt., 211 Murrah Bldg., Columbus. 12-24

La., New Orleans—Bek Henriksen erect single raised residence, Quince and Heaton Sts.; \$10,500, sheet metal work; E. L. Marke, Contr., 3838 Louisiana Ave. Pkwy. 12-24

Md., Baltimore—Harford Real Estate Co., E. Evans Ulrich, 2811 Rosalie Ave., erect 12 frame and brick dwellings, 2608-14, 2609-21 and 2800 Roselawn Ave.; 1½ and 2 stories; owner builds. 12-24

Md., Baltimore—Poplar Grove Development Co. erect 6 dwellings and garages, 5612-22 Stonington Ave.; brick, 2 stories, 15x40 ft. and 10x18 ft.; total \$12,000; owner builds. 12-24

Md., Baltimore—Mrs. Agnes Bell, 24 N. Milton Ave., erect 2-story brick residence, 6700-02 Harford Rd.; H. P. Mason, Archt., 2001 Duke Land St.; John H. Otto, Contr., Henry Ave., Fullerton. 12-24

Md., Baltimore—Wm. Mueller, 6204 Brooks Ave., erect 2 duplexes and garages, 2900-02½ Arlington Ave.; brick and stucco, 2 stories, 40x29 ft. and 22x19 ft.; total \$20,000; owner builds. 12-24

Tenn., Nashville—R. E. Martin, Hillsboro Rd., let contract at \$28,535 to Foster & Creighton Co., Amer. Natl. Bk. Bldg. for stone residence, Hillsboro Rd.; 3 stories, 100x45 ft., oak and tile floors, stone foundation, tile roof, plaster board, 3 motor operated overhead type garage doors; Warfield & Koebel, Archts., Nash. Trust Bldg. See Want Section—Building Material and Equipment. 12-24

Tex., San Antonio—Jos. Edw. Horowitz, 214 Claremont St., erect face brick duplex, 900 block W. Craig Place; cast stone trim, orna. iron railing, 10 rooms; N. Straus Nayfach, Archt., Alamo Natl. Bldg.; Ben H. Jannsen, Contr., 1710 McKinley St. 12-24

Va., Williamsburg—B. D. Peachy let contract to T. A. Painter, Williamsburg, for \$16,000 residence; brick veneer, 2 stories, 78x28 ft., random slate roof, brick foundation; Elmer Cappelman, Archt., 110 N. Seventh St., Richmond. 12-24

## CONSTRUCTION DEPARTMENT

## Manufacturers Record

## Government and State

Ark., North Little Rock, Little Rock—Following sub-contracts let on \$110,000 post office: Sand, rock and cement, Big Rock Stone & Material Co., ft. of Ashley St.; ornate iron fixtures and fittings, Bemberg & Sons Iron Works, 1000 Fairview St.; excavation, Grady Garms, Rector Bldg.; struc. steel, Arkansas Foundry Co., 1500 E. Sixth St., all Little Rock; cut stone, Walker Bros., Bloomington, Ind.; granite, John Clark Co., Rockville, Minn.; millwork, Standard Lumber Co., Pine Bluff; McGregor & Plekett, Contrs., 113½ W. Third St., Little Rock. 11-26

D. C., Washington—Gray Knox Marble Co., Sutherland Ave., Knoxville, Tenn., has \$1,500,000 marble contract for U. S. Supreme Court superstructure; Case Gilbert, Archt., 244 Madison Ave., New York; George A. Fuller Co., Munsey Bldg., Washington, gen. contract at \$8,333,000; David Lynn, Architect of The Capitol. 11-26

Ky., Lexington—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, let contract at \$217,341 to Raymond Contracting Co., Bowling Green, Ky., for foundations for \$5,000,000 narcotic farm. 12-31

N. C., Greensboro—Red Rowe Heating & Plumbing Co., 638 N. Main St., High Point, N. C., has heating and plumbing contract for \$660,000 post office, court house, etc.; ornate iron, Soule Hoffmann Co., 1910 S. Boulevard, Chattanooga, N. C.; stone, Indiana Limestone Co., Bedford, Ind.; granite, J. D. Sargent Granite Co., Mount Airy, N. C.; Geo. H. Rommel Co., Contr., 958 Logan St., Louisville, Ky. 12-14

## Hospitals, Sanitariums, Etc.

Md., Baltimore—Sisters of Charity alter men's room in main bldg., install elevator shaft and connecting tunnel, Mount Hope Retreat; \$12,000; Frainie Bros., Contrs., 19 W. Franklin St.

Md., Sykesville—Springfield State Hospital Bd. of Managers let contract to Davis Construction Co., 9 W. Chase St., for alterations to Hubner Bldg., nurses' home and dormitory; Henry Powell Hopkins, Archt., 10 E. Mulberry St., both Baltimore. 12-31

S. C., Rock Hill—Waldrop Heating & Plumbing Co., Rock Hill, S. C., has \$90,000 heating, plumbing and steam distribution system contract for 5 ward bldgs., Veterans Administration Hospital; Henry B. Ryan Co., Contr., 510 N. Dearborn St., Chicago, Ill. 12-10

## Hotels and Apartments

Md., Baltimore—Charles and Thirty-Third Streets, Inc., Gunn, Williamson & Guy, Inc., 1206 North Calvert Street, interested, let contract to Consolidated Engineering Co., Inc., 20 E. Franklin St., for 10-story apartment, 33rd and Charles; financing by Consolidated Holding Co.; Fredk. A. Fletcher, Archt., 517 N. Charles; Kubitz & Koenig, Struc. Engrs., Emerson Tower; J. Hamilton Walker, Mech. Engr., 100 E. Pleasant St. 11-5

## Schools

D. C., Washington—George Washington University, 2100 K St., let contract at \$28,000 to DeSibour Construction Co., 2009 R St., N. W., for addition to Medical School and Hospital; brick and conc., fireproof, 4 stories, L shape, 93.6 ft., 40 ft. with 20-ft. L, 73.6 ft. and 20 ft., steel Fenestra windows, conc. floors and foundation, slag roof; furnishings, equipment, etc., \$20,000; 9 laboratories; plans by C. E. Merry, Asst. to Comptroller, with Leo Raywid, Const. Engr., 3217 Conn. Ave., N. W. 12-31

D. C., Washington—Dist. Commrs., 427 Dist. Bldg., let contract at \$131,850 to Little Construction Co., Builders Bldg., Charlotte, N. C., for addition and alterations to Douglass and Simmons schools, Pierce St., N. W., near First St. 12-24

La., Marrero—Roman Catholic Church, Diocese of New Orleans, let contract to Lionel Favret, 937 Gravier St., New Orleans, for \$85,000 school and auditorium, Hope Haven; masonry, stucco, conc., steel, 2 stories, 94x141 ft., wood and tile floors, reinforced, foundation, tile and comp. built-up flat and hip roof, steel sash, ventilators, marble; address proposals on furnishings, equipment, etc., \$10,000, to Rev. Father Weinhaven, Marrero; A. S. Montz, Archt.-Engr., 740 Poydras St., New Orleans. 11-12

La., New Orleans—Woodward-Wight & Co., 451 Howard Ave., have marble contract for \$200,000 St. Phillip Elementary School; E. A. Christy, Supvg. Archt. for School. 8-20

Mo., Kansas City—Bd. of Education completed footings for \$400,000 addition to East

Side High School, 20th St. and Van Brunt Blvd.; fireproof, 4 stories, 19 classrooms, auditorium, 2 gymnasias, cafeteria and branch library; Interstate Construction Co., Contr., Walsix Bldg., Kansas City, Mo.; about 146 tons struc. steel, Kansas City Structural Steel Co., Kansas City, Kan. 12-17

## Stores

D. C., Washington—D. C. Gruver, 927 15th St., erect \$12,000 store and flat, 400 Kennedy St.; brick, 2 stories, tin roof, hot water heat; Geo. T. Santmyers, Archt., 925 15th St., N. W.; owner builds.

D. C., Washington—Abraham Miller, 1333 Eighth St., N. W., erect \$10,000 brick store, 802 K St., N. W.; 1 story, slag roof, hot water heat; D. L. Stern, Contr., 1412 Eye St., N. W.

D. C., Washington—Paul Feirebend, 2703 Nicholas Ave., S. E., erect brick and hollow tile store and apartment, Seventh and Orange Sts., S. E.; 2 stories, 52x25 ft.; W. B. Honey, Archt., 1235 Morse St., N. E.; E. W. Cord Co., Contr., 1003 K St., N. W.

D. C., Washington—Geo. B. Furman, 1409 L St., N. W., erect \$13,500 store and apartment, 1109-15 13th St.; brick, 2 stories, tin roof, hot water heat; A. S. J. Atkinson, Archt., 3801 Macomb St., Washington; M. C. Owens, Contr., Vienna, Va.

D. C., Washington—Natale Puglisi, 229 Upshur St., N. W., erect brick store, 222 Upshur St.; 1 story, comp. roof, hot water heat; plans by W. B. Honey, 1235 Morse St., N. E.; owner builds.

Ga., Atlanta—Southern G-F Co., 263 Decatur St., S. E., has rein. steel contract for store bldg. for Virgil Collier, 205 Peachtree Circle, Roy Collier, 3850 Peachtree Rd., N. W., and Miss Lula Collier; Pringle & Smith, Archts., Norris Bldg.; Barge-Thompson Co., Contr., 136 Ellis St., N. E., receiving revised sub-bids; conc. frame under way. 12-10

La., New Orleans—Antonio Bologna erect brick store, Canal Blvd., and Greenwood St.; Frank Nuccio, Contr., 4001 Adams St.; plans ready for sub-contract about Feb.

Tex., San Saba—T. A. Murray remodel several bldgs.; J. W. Patterson, Contr.

## Warehouses

Md., Baltimore—M. Shalitz & Sons, 916 S. Charles St., let contract to Abraham Goodman, 2000 Whittier Ave., for furniture warehouse, 7-9 W. Montgomery St.; \$10,000 to \$15,000, brick, 2 stories, 22x120 ft.; A. C. Radiszewski, Archt., 425 S. Ellwood Ave.

## Trade Literature

**Seaboard Utilities Growth.**—The Seaboard Public Service Company, Alexandria, Va., has issued a circular under the caption, "A Story of Unusual Progress in Unusual Times." This company, through subsidiaries strategically located, operates utilities on the Eastern Seaboard, and during the depression years has taken advantage of prevailing low prices to extend and improve its system, expending in 1930 and 1931 more than \$12,600,000 to construct new power plants, transmission lines and other facilities. These and other interesting facts are presented in the circular.

**West Virginia.**—A booklet, edited by Ross B. Johnson and published by the State of West Virginia, Department of Agriculture, Howard M. Gore, Commissioner, has recently been issued under the caption "West Virginia." Devoted entirely to the state, the booklet is attractively illustrated, showing "intimate scenes from the romantic pages of its history, and fascinating glimpses of its varied and interesting industrial life."

**Chemistry in Business.**—A booklet, "The Consulting Chemist and Your Business," has been issued by Foster D. Snell, Inc., consulting chemist of Brooklyn, N. Y. The character of the service rendered by the company is outlined in the booklet which is available upon request.

**Spray Products.**—A leaflet on spray products issued by the Grasselli Chemical Co., Inc., Cleveland, Ohio, should be of especial interest to growers of vegetable or flower gardens and fruit trees, as outlining suggestions for the control of insects and diseases. A feature of the leaflet is Grasselli's Growers Guide, which suggests materials and specific dilutions for making sprays for individual crops, and indicates the proper time of application.

**Compulsory Unemployment Insurance.**—Under this caption, the University of North Carolina Extension Bulletin for November has been issued as a debate handbook. It was compiled by E. R. Rankin and is from the University of North Carolina Press. Reviewing debating contests held by the High School Debating Union it contains general references, affirmative and negative references, and a bibliography outlining sources of other information.

**Industrial Eye Clinic.**—The Policyholders Service Bureau of the Metropolitan Life Insurance Company, New York, has issued the fourth number of its Industrial Health Series reports, on "Functions of the Industrial Eye Clinic," describing methods employed by leading industrial enterprises for supervising visual conditions of workers through plant clinics. Copies are available from the Bureau.

**Tanner Tanks and Tannergas.**—The Sullivan Machinery Company, Chicago, recently issued Bulletin 100-C on Tanner Tanks and Tannergas, an anti-freeze system for air users. Improvements in detail of design have been made in the tanks since their introduction in 1930, to secure better control of distribution and greater air economy. The tanks are described and illustrated in the bulletin, which also shows a number of applications.

**Vogt Homoweld.**—Because of recent developments and trends in welding, the Henry Vogt Machine Company, Louisville, Ky., has issued Bulletin W-1, outlining the success of that company in developing Homoweld. As this is an advanced method of electric welding, the bulletin should be of interest to users of welded pressure and temperature equipment.

## Lower Prices on Speed Reducers

Lower prices on various types and sizes of speed reducers are announced by the Falk Corporation, Milwaukee, Wis. Falk standard speed reducers are made in single, double and triple reductions, both horizontal and vertical, for parallel shaft and right angle drives. There are 17 types in 202 sizes, ranging from 1000 h. p. down to .05 h. p., with 133 standard ratios from 1.5:1 to 518:1. Price changes apply to all sizes in common use.

## "Caterpillar" Tractors for Airports

The U. S. Government Air Corps, with headquarters at Wright Field, Dayton, Ohio, has ordered initially 12 "Caterpillar" tractors as special equipment for its air fields. Four of these are regular standard Tens, manufactured by the Caterpillar Tractor Co., Peoria, Ill., and eight are equipped with new front cranes, designed according to specifications of the U. S. Air Corps and manufactured by the Willamette-Ersted Company, Portland, Oregon. In the distribution of units, two tractors and cranes will be sent to Randolph Field, Texas, and one to Maxwell Field, Montgomery, Ala.

# A City as its Own Worst Enemy

COULD an outsider do any greater harm to a city than one that allows an unsightly, foul-smelling, smoky area to exist on its outskirts? Travelers, visitors, prospective residents and prospective industrialists are not agreeably impressed when they must go through such areas upon their approach to a city.

Such a city is its own worst enemy.

It is not only of interest to the immediate inhabitants of the city to preserve its beauty and healthfulness, but the use of modern methods for the disposal of garbage, ashes and rubbish, marks the turning point in many a city in establishing itself for future growth.

Throughout the entire South from Maryland to Texas, cities and towns have grown more rapidly than those in other sections. The recognition of the favorable factors the South possesses for industries, is causing it to be looked upon more and more with favor in the establishment of industries of world-wide importance.

Municipal officials, City Commissioners, members of Boards of Health and Sanitary Engineers in many of the larger cities of this country have investigated and approved the methods employed by the D-N Corporation and are constantly expressing their satisfaction with this system of refuse disposal.

We welcome correspondence and inquiries regarding such details as the cost of collection, the methods of final disposal, the cost of complete installation, selection of location and such other local problems that must be met.

*The experience of our staff of engineers is at your command*

**D-N CORPORATION**

MUNICIPAL SANITATION—REFUSE INCINERATORS  
SEWAGE DISPOSAL SYSTEMS

WINSTON-SALEM - - - NORTH CAROLINA

# WANT SECTION

## THE CLASSIFICATIONS IN THIS SECTION ARE:

### Machinery and Supplies

Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety.

*Items in this department are published without charge and these columns are open for the publication of wants of all kinds relating to construction work, machinery, materials and supplies.*

### Building Materials and Equipment

This division comprises all classes and kinds of materials and equipment used in building and construction projects of every kind.

### Bids Asked

Includes bids asked by U. S. Government, States, districts, municipalities, firms and individuals for machinery, materials, supplies and construction work.

### Machinery and Supplies

**Distributor.**—R. B. Stewart, 212 Park Ave., Fort Myers, Fla.—Wants prices and data on new or used distributor, Etnyre or Kliney, 60 gal. capacity, unmounted or mounted on dual wheel truck.

**Gold Recovery Equipment.**—Porter Place Mining Co., Bridgewater, N. C. Frank R. Porter, Pres., Isotherman Hotel, Rutherfordton, N. C.—Wants complete cyanide installation for gold recovery mine at Portermill, between Bostic and Forest City; will consider used equipment in good condition.

**Motors.**—Guyan Machine Shops, Logan, W. Va.—Wants prices and data on a. c. motors, 3 phase, 60 cycle, 440 volt, with base and starter: 3—50 h. p., 900 r. p. m.; 1—100 h. p., 1800 r. p. m.; 1—75 h. p., 1800 r. p. m.; 1—40 h. p., 3600 r. p. m.; 1—40 h. p., 1200 r. p. m.; 1—60 h. p., 1800 r. p. m.; 5—30 h. p., 1200 r. p. m.; 1—30 h. p., 1800 r. p. m.; 2—30 h. p., 900 r. p. m.; 1—25 h. p., 3600 r. p. m.; 2—15 h. p., 1200 r. p. m.; 1—15 h. p., 900 r. p. m.; 1—15 h. p., 1800 r. p. m.; 4—10 h. p., 900 r. p. m.; 1—10 h. p., 1800 r. p. m.; 1—10 h. p., 3600 r. p. m.; 2—7½ h. p., 900 r. p. m.; 6—5 h. p., 900 r. p. m.; 1—3 h. p., 3600 r. p. m.; also, 1—40 h. p., 675 r. p. m., 220 volt.

**Steam Hammer.**—W. M. Smith & Co. (Mchly. Dealer), Box 1709, Birmingham, Ala.—Wants prices and data on steam hammer for driving creosoted piling.

**Fairmont Foundry & Mfg. Co., L. J. Car-skaden, Pres., Gen. Mgr., 311 Leona Court, Fairmont, W. Va.**, wants following:

- (1) Burners
- (2) Burners (Portable Electric)
- (3) Core Furnace—small
- (4) Core Oven—about 5x8 ft.
- (5) Monorail Cranes.

L. B. Smith, Inc. (Contrs. Equipment), Camp Hill, Pa.—Wants prices and data on:

- (1) Bucket Loaders and Belt Conveyors
- (2) Crushers (Gyratory)—26 to 30 in.
- (3) Crushers (Jaw Type)—10x30 to 18x36
- (4) Engines (Diesel)—100 to 200 h. p.
- (5) Electric Motors—75 to 150 h. p.
- (6) Steam Shovels—Erie-B and Erie-B2.

John A. Weaver, West Jefferson, N. C.—Wants prices and data on following, used, good condition, on:

- (1) Band Saw
- (2) Dowel Machine—for turning broom handles, walking canes and cue sticks
- (3) Lathe—for making handles and baseball bats.

Machinery Record, Hackley Morrison (Mchly. Dealer), Mutual Bldg., Richmond, Va.—Wants prices and data on:

- (1) Boiler—225 h. p., water tube, cross drum or bent tube, 175 lb. A. S. M. E. with or without single retort underfeed stoker and superheater for 50 degree superheater
- (2) Generating Unit—625 kv-a., 220 volt, 3 phase, 60 cycle, a. c., Uniflow, 160 lb. pressure, 50 degree superheater. 0 to 2 lb. back pressure
- (3) Turbo Generator (Condensing)—625 kv-a., 220 volt, 3 phase, 60 cycle, 160 lb., 50 degree superheater with surface condenser and switchboard panels.

F. E. Ladd, Ft. Payne, Ala.—Wants prices and data on:

- (1) Air Compressor — gasoline driven, to operate 2 drills
- (2) Air Drills—2.

### Miscellaneous

**Paint Ingredients.**—W. M. Smith & Co. (Mchly. Dealer), Box 1709, Birmingham, Ala.—Wants prices and data on lithophane, leaded zinc, turpentine, raw linseed oil and other ingredients (barrel lots) used in manufacturing paints.

C. S. Hassell, 2028 S. W. 24th Terrace, Miami, Fla.—Wants prices and data from manufacturers in position to manufacture automatic electric device for determining quality of eggs in cartons, without handling or touching eggs in any way, cartons remaining sealed; determination of quality to be 100% accurate and only taking 2 seconds

for retail purchaser to know absolute quality of eggs contained therein; similar in design to cash register; has projectoscope principle; consists of electro chemical ray projector, infra red filter, motorized tray and mirror system for ray projection; stands about 2½ ft. high; can be made from wood or metal; cartons same size as ordinary egg cartons but contain improved and patented features; cartons, when placed in machine, instantly show purchaser quality of eggs; if eggs are good, 12 circles of golden sunlight appear on mirror; if bad, range in color from pink to red, through purple to blue and then black.

### Building Material and Equipment

Frank Masling, P. O. Box 367, Monroe, La., wants prices on following for \$97,000 Sunday school addition:

#### Cast Stone

Flooring—terrazzo, tile, composition

#### Limestone

#### Marble

#### Metal Doors

Roofing—flat, built-up

Steel Sash and Trim

Tile—hollow

#### Vault Door.

W. E. Smith, 4310 Hampton Blvd., Norfolk, Va., entering wholesale and retail supply business, as Smith Supply Co., wants prices and data from manufacturers on:

#### Sash and Doors

#### Builders' Hardware

#### Paints and Varnishes

#### Roofing and Masonry Materials

#### Household Utensils

#### Plumbing and Heating Fixtures

A. A. Clay & Son, Indian Fields, Ky., want prices on following for store:

#### Metal Ceilings

#### Plaster Board.

Foster & Creighton Co., Contrs., Amer. Natl. Bk. Bldg., Nashville, Tenn., wants prices on following for \$29,000 dwelling:

#### Flooring—hardwood, tile

#### Plaster Board

#### Roofing—tile

#### Garage Doors (3)—Overhead type.

### Bids Asked

**Aerial Photographic Work, etc.**—U. S. Engr. Office, 707 Postal Telegraph Bldg., Kansas City, Mo.—Bids Jan. 30 for preparing approx. 32 controlled aerial photographic mosaic atlas sheets, covering approx. 798 sq. mi. of Missouri River and adjacent territory in different localities between Kansas City, Mo. (mile 397) and mouth (mile 0), designated Item No. 1; and assembling and binding approx. 78 completed atlas sheets for Missouri River and adjacent territory from Kansas City, Mo., to mouth, into finished photographic mosaic atlas, in 2 volumes, including incidental work, designated Item No. 2.

**Automotive Supplies.**—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Jan. 11 for automotive supplies, delivery Quantico, Va.

**Bridge.**—Virginia. See Construction News—Roads, Streets and Paving.

**Building Alterations.**—Ed. of Awards, Office E. H. Beer, City Register, City Hall, Baltimore, Md.—Bids Jan. 13 for alterations to office of clerk of criminal court, Room 104, Courthouse.

**Cleaning Machine.**—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Jan. 19 for vapor spray, high pressure cleaning machine.

**Envelopes and Paper.**—Joint Committee on Printing, in the Capitol, Washington, D. C.—Bids Jan. 25 for furnishing envelopes during 6 or 12 months period beginning Mar. 1, 1932; also, for paper for public printing and binding during 6 or 12 months period beginning Mar. 1, 1932; address George H. Carter, Public Printer, Washington, for proposal blanks.

**Garages.**—U. S. Engr. Office, Huntington, W. Va.—Bids Jan. 15 for 2- and 3-car garages, for operating and care of canals and other works of navigation, Ohio River.

**Indicators, Recorders and Thermometers.**—U. S. Engr. Office, 1006 McCall Bldg., Memphis, Tenn.—Bids Jan. 21 for indicators and recorders and multiple (3 pen) recording thermometers.

**Insulation and Cooling System.**—Constructing Quartermaster, Randolph Field, Tex.—Bids Jan. 22 for insulation and cooling system in administration bldg., Randolph Field.

**Jetty Repairs.**—Hollywood, Fla. See Construction News—Miscellaneous Construction.

**Lathes.**—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids Jan. 26 for precision, back geared screw cutting lathe; also motor driven, automatic, chucking turret lathe.

**Lift.**—Purchasing and Contracting Officer, Q. M. Corps, Normoyle Depot, San Antonio, Tex.—Bids Jan. 15 for truck and bus lift, 18,000 lb. capacity.

**Linseed Oil.**—Ben M. Sawyer, Ch. Highway Commr., Columbia, S. C.—Bids Jan. 12 for 30,000 lb. raw linseed oil.

**Manhole Frames and Covers.**—Bd. of Awards, George E. Finck, Sewerage Engr., Baltimore, Md.—Bids Jan. 13 for furnishing and livering manhole frames and covers, sewer inlet and similar iron castings; Material Contr. No. 86.

**Morocco.**—Pur. Agt., Government Printing Office, Washington, D. C.—Bids Jan. 25 for 20 doz. best quality durable morocco.

**Oversuffed Furniture.**—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Jan. 11 for oversuffed furniture, delivery Parris Island (Port Royal), S. C.

**Paint Agitator.**—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Jan. 13 for paint agitator, delivery Quantico, Va.

**Paints.**—Post and Acting Div. Quartermaster, Purchasing and Contracting Branch, Fort Sam Houston, San Antonio, Tex.—Bids Jan. 14 for 600 gal. flat white paint, 200 gal. white paint in oil, 200 lb. raw sienna in oil, 20 gal. white shellac and 150 gal. white enamel.

**Piling.**—War Dept., Office of Constructing Q. M. Langley Field, Va.—Bids Jan. 15 for construction complete sheet piling and extending utility lines through sheet piling for Parachute Bldg.

**Pipe.**—Gen. Pur. Officer, Panama Canal, Washington, D. C.—Bids Jan. 14 for 1800 ft. cast iron water pipe, 12-in. diam., Sch. 2717.

**Plumbing, Wiring, etc.**—Suovg. Archt., Treasury Dept., Washington, D. C.—Bids Jan. 21 for new brass water piping, electrically operated drinking fountains, etc., U. S. post office, Rocky Mount, N. C.

**Refrigerator.**—Office of Chief, Bureau of Yards and Docks, Navy Dept., Washington, D. C.—Bids Jan. 13 for automatic mechanical refrigerator, navy yard, Charleston, S. C.

**Riprap Seawall Foundation.**—Washington, D. C. See Construction News—Miscellaneous Construction.

**Road.**—Maryland. See Construction News—Roads, Streets and Paving.

**Roads.**—State of Kentucky, 18 roads. See Construction News—Roads, Streets and Paving.

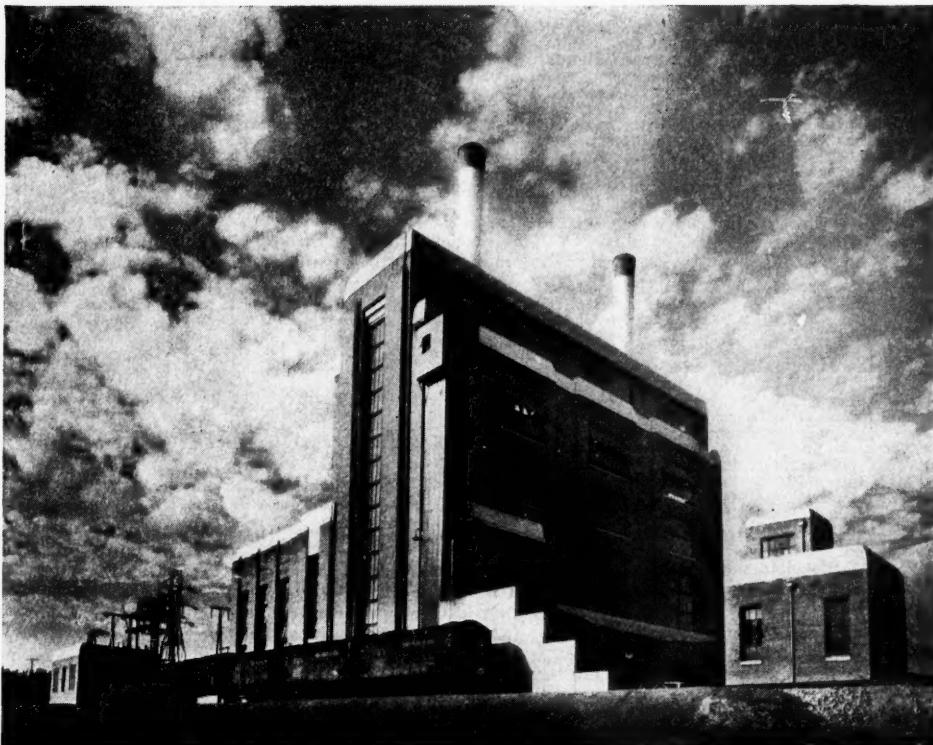
**Roads.**—Virginia. See Construction News Roads, Streets and Paving.

**Smokestack.**—Quartermaster, Camp Knox, Ky.—Bids Jan. 11 for dismantling smokestack and furnishing and erecting new smokestack on camp laundry.

**Steel Lockers.**—Dist. Commrs., Dist. Bldg., Washington, D. C.—Bids Jan. 13 for 231 steel lockers for public schools.

**Tanks.**—Quartermaster, Langley Field, Hampton, Va.—Bids Jan. 14 for 10 hot water storage tanks, 36x72 in., with actual filling capacity of 318 gal.

New Bremo Bluff  
plant of Virginia  
Public Service  
Company



# Serving the South East

Actively identified

with the progress of the South East is the Seaboard Public Service Company. Its operating companies serve 700 communities in the richest agricultural and industrial sections in seven southern states—Maryland, Delaware, Virginia, West

Virginia, North Carolina, Georgia and Florida.

More than 19,000 stockholders, most of whom live in these seven states, own shares in Seaboard Public Service Company or its subsidiaries. Their investment proves their confidence in the South East.

*A new circular describing the growth of Seaboard Public Service Company in recent years will gladly be sent you on request.  
Address: Public Information Department, Alexandria, Va.*

# Seaboard PUBLIC SERVICE COMPANY

EASTERN SHORE PUBLIC SERVICE COMPANY . Salisbury, Md.  
VIRGINIA PUBLIC SERVICE COMPANY . . . Charlottesville, Va.  
TIDE WATER POWER COMPANY . . . . Wilmington, N. C.  
GEORGIA POWER AND LIGHT COMPANY . . . Valdosta, Ga.  
FLORIDA POWER CORPORATION . . . St. Petersburg, Fla.

PART OF THE MIDDLE WEST UTILITIES SYSTEM



**Road, Sidewalk, Bridge.**—State Highway Dept., Dover, Del.—Bids Jan. 19 for: Cont. 229, 3.74 mi. 9-ft. conc., Gum Cross Roads-Middleford, 13,000 cu. yd. excavation, 6000 cu. yd. borrow, 3750 cu. yd. conc. pavement, 2500 lin. ft. exp. joint, 14,500 lb. reinforcement, 25,000 lb. struc. steel, 4000 lin. ft. wood shoulder curb, 3200 lin. ft. timber piling, 4M ft. b. m. sheet piling; Cont. 232, 275 ml. graveling, Stockley-Zoar Camp, 7000 cu. yd. excavation, 10,000 cu. yd. borrow, 4500 cu. yd. gravel, 9000 lb. reinforcement, 1500 lin. ft. timber piling, 2M ft. b. m. sheet piling; Cont. 235, 5255 ft. sidewalk, Dover to State College, 1200 cu. yd. excavation, 21,000 sq. ft. conc. sidewalk, 1000 lb. catch basin; Cont. 236, 1250 ft. sidewalk, Naamans Creek Road-Philadelphia Pike to Hickman Road, 5000 sq. ft. conc. sidewalk, 1000 lb. catch basin; Cont. 237, 1.00 mi. grading, Augustinge Bridge to Concord Pike, 23,000 cu. yd. excavation, 1000 cu. yd. rock excavation; Cont. 238, 2700 ft. sidewalk, Middletown-St. Anne's Church, 1200 cu. yd. excavation, 1200 cu. yd. borrow, 11,000 sq. ft. conc. sidewalk; Cont. 239, 6275 ft. sidewalk, Kennett Pike to Greenville, 3000 cu. yd. borrow, 24,000 sq. ft. conc. sidewalk, 1500 lb. catch basin; Cont. 240, 1.20 mi. Portsville-Bethel Cutoff, 25,000 cu. yd. excavation, 20,000 cu. yd. borrow, 9000 lb. reinforcement, 1200 lin. ft. timber piling, 2M ft. b. m. sheet piling.

**Steel Shed.**—Houston, Tex. See Construction News—Miscellaneous Construction.

**Transformer and Choke Coll.**—Marine Corps, Q. M. Dept., Washington, D. C.—Bids Jan. 11 for transformer and choke coil, delivery Washington, D. C.

**Water Piping, etc.**—Supvg. Archt., Assessory Dept., Washington, D. C.—Bids Jan. 21 for new brass water piping, electrically operated drinking fountains, etc., U. S. post office, Rocky Mount, N. C.

**Wire Nails.**—State Div. of Purchase and Contract, W. Z. Betts, Asst. Dir., Raleigh, N. C.—Bids Jan. 11 for carload common wire nails: 300 kegs, 60 d.; 25 kegs, 40 d.; 25 kegs, 20 d.; 50 kegs, 8-in. wire spikes.

**State Div. of Purchase and Contract, W. Z. Betts, Asst. Dir., Raleigh, N. C.**—Bids Jan. 11 for:

**Hand Saws**—6 doz.

**Wire Nails**—carload, 25 kegs 10 d., 75 kegs 40 d., 100 kegs 60 d., 50 kegs 80 d.; carload, 200 kegs 60 d., 100 kegs 40 d., 60 kegs 20 d., 20 kegs 10 d., 10 kegs 8 d., 10 kegs 6 d.

**Pipe**—4220 lin. ft., 2½ in., standard galv. steel, threaded and coupled.

**Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.**—Bids until dates indicated for:

**Lathe**—motor driven, universal turret, chasing attachment and taper attachment, for Portsmouth, Jan. 12.

**Lathe**—motor driven, universal turret, for Hampton Roads, Jan. 12.

**Exhaust Canopies**—2, for Hampton Roads, Jan. 12.

**Paint Spray Booth**—canopy type, for Hampton Roads, Jan. 12.

**Sheet Metal**—for eastern and western yards, Jan. 19.

**Drag and Lift Balance**—for Hampton, Jan. 12.

**Radio Receivers**—15 to 25, for Washington, Jan. 19.

**Boiler Tubes, etc.**—302 seamless steel tubes and 2310 steel boiler tubes, for Norfolk, Jan. 12.

**Pumps and Spares**—28, electric, portable, for east and west yards, Jan. 19.

**Steel Plates**—for eastern and western yards, Jan. 19.

**Lumber and Flooring**—100,000 ft. lumber, 30,000 ft. flooring, for Norfolk, Jan. 19.

**Div. of Purchase, Sales and Traffic, Dept. of Agriculture, Washington, D. C.**—Bids until dates indicated for:

**Biology Tables**—2, for Albany, Ga., Jan. 15.

**Filing Cases (Pamphlet)**—3000, for Washington, Jan. 15.

**Motor Truck**—for Eldorado, Ark., Jan. 12.

### Veterans Hospital for Arkansas

Fayetteville, Ark.—A recommendation of the Federal Board of Hospitalization that a new veterans hospital be established in Arkansas, has been approved by President Hoover, who so advises in letters to the United States Senators from Arkansas and to the Administrator of Veterans' Affairs. The hospital will be located in the vicinity of Fayetteville.

## CONSTRUCTION DEPARTMENT

## INDUSTRIAL NEWS

### Heads Fisher Governor Company

Jasper H. Fisher, associated with the company since 1912, has been elected president of the Fisher Governor Company, Marshalltown, Iowa. He has served as secretary, president and for the past two years as chairman of the board of directors. L. W. Browne, connected with the company for 16 years and serving for the past two years as president, has resigned.

### Calendars for 1932

The MANUFACTURERS RECORD has received 1932 calendars from the following: John A. Roebling's Sons Company, Trenton, N. J., manufacturers of wire rope and wire; Alpha Portland Cement Company, Easton, Pa., and Chicago, Ill.; Pennsylvania Railroad; O. J. Maigne Company, Philadelphia and Washington, manufacturers of printers' rollers; the North Carolina Granite Corporation, Mount Airy, N. C., producers of finished granite for

buildings, bridges, memorials, curbing, paving blocks, etc.; Carborundum Company, Niagara Falls, N. Y., manufacturers of abrasive materials; the Draper Corporation, Hopedale, Mass., manufacturers of cotton mill machinery; Walter H. Flood & Company, Chicago, Ill., and Jackson, Miss., chemical engineers; W. Scott Ingram, Inc., New York City, manufacturers of "Sur-T-Fyd" brand of typewriter, multigraph and addressograph ribbons, inks, type cleaners, etc.; Brooks-Scanlon Corporation, Foley, Fla., lumber manufacturers; Baltimore & Ohio Railroad; Baltimore Trust Company and Maryland Trust Company, both of Baltimore; the Thornton Fire Brick Company, Clarksburg, W. Va., manufacturers of brick and hollow building tile; McCormick & Company, Inc., Baltimore, producers of spices, extracts, mustards, mayonnaise and teas; R. D. Cole Manufacturing Company, Newnan, Ga., manufacturers of towers and tanks, stand pipes, boilers, stacks and steel plate construction; Young & Selden Company, Baltimore, stationers, printers, lithographers, blank book makers and steel engravers.

### Residence Building and Home Modernization

Residential construction may still be expected to first point the way to an upward movement in the construction industry, and the principal hope for an immediate upturn lies in organized efforts by states and municipalities back of home modernization operations, for the relief of local unemployment, according to Harvey L. Harris, general manager, Home Construction Division of Sears, Roebuck and Co.

In a discussion of the present situation in the building field, Mr. Harris said:

"For all building construction contracts, the falling off for the first ten months of the year measured in terms of volume or floor space was 26.7 per cent as compared with 1930, while the decline in terms of dollar values was 30 per cent as compared with the first ten months of 1930.

"There is, within the residential construction field, an opportunity for immediate improvement, not only to the industry itself, but to the general economic situation, and that is in the field of home modernization. The fall and early winter have proven the efficiency of this movement in increased business and employment wherever it has been seriously pushed.

"President Hoover and other leaders in state and nation have urged home modernization as a means of reviving both employment and industry. Several governors have made it a part of their unemployment relief programs. In New York, Governor Roosevelt urged local committees to organize home modernization drives. As a result, a Rochester civic committee organized a ten-day campaign this month, and obtained pledges for more than \$6,000,000 in such work, \$3,000,000 of which must go to local labor.

"The prime essential for successful

home modernizing operations on a broad scale is easy financing. Ample funds are available for this purpose and ample credits. The drawback is not frozen credits so much as frozen courage."

### \$1,000,000 Paper Plant Expansion

Canton, N. C.—Marking progress on the construction of increased plant facilities here for the Champion Fibre Company, which will involve an outlay of \$1,000,000, more than one-fourth of the steel work is in place on the big machine building which measures 352 by 110 feet, while the walls of the 54-by 120-foot beater room are completed, and foundation piles for the finishing room will be in place in a few days. More than \$500,000 worth of machinery will be installed, including a paper machine, for which contract has been awarded to the Pusey & Jones Company, Wilmington, Del. Contracts have also been awarded for other equipment, as recently announced. Morton C. Tuttle, Boston, Mass., is handling general contract, and the Ingalls Iron Works Company, Birmingham, Ala., is furnishing structural steel. In connection with the plant, the company is building a 525-foot dam below Sunburst on the West Fork of Pigeon River, 50 feet high, for storage purposes. It will be of concrete and will flood an area of slightly more than 100 acres. W. W. Boxley Construction Company, Roanoke, Va., is handling construction.

HILL BROS. CANNERY, which opened in Clearwater, Fla., recently with a crew of 125, has increased production and has added a night force of 125 persons. The company is now producing 1000 cases of canned fruit daily.

record

paving  
Niagara  
we ma-  
pedale,  
machin-  
Chicago,  
engineers;  
manu-  
writer,  
inks,  
corpora-  
Bal-  
Trust  
both  
Com-  
nick &  
spices,  
teas;  
ewnan,  
tanks,  
al plate  
y, Bal-  
raphers.  
ers.

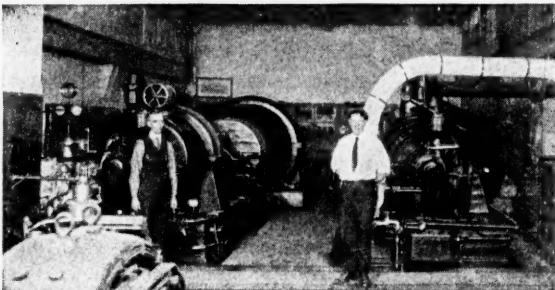
broad  
ds are  
ample  
frozen  
"

nsion

ess on  
facili-  
the Com-  
day of  
of the  
machine  
0 feet,  
20-foot  
ounda-  
will be  
\$500,-  
talled,  
which  
Pusey  
Del.  
ed for  
ounced.  
s han-  
Gallia,  
Ala.,  
con-  
any is  
burst  
er, 50  
It will  
rea of  
W. W.  
anoke,

ned in  
crew  
nd has  
s. The  
ases of

## POWER and HEAT for Industrial Plants



THINKING engineers have been quick to realize the economic possibilities of back-pressure and bleeder turbines wherever steam is required for processes or heating. With present day boiler pressures, a pound of high pressure steam, which costs little more for fuel than does a pound of low pressure steam, will generate as much, or even more, power by expansion down to the pressures carried in the low pressure steam system than would a pound of steam at former boiler pressures expanded to condenser. Thus, the steam for heating costs practically nothing, or from the converse point of view, the power costs practically nothing, since only a little more fuel is required to produce both power and heat than would be required for heat alone.

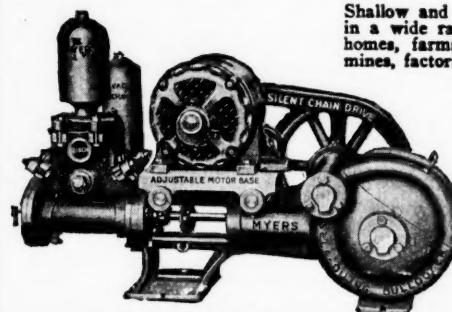
De Laval steam turbines are designed for high pressure, condensing and non-condensing, back pressure, bleeder and mixed flow service.

The photograph shows two 800 hp. DE LAVAL GEARED TURBINES driving DC. generators which supply power and heating steam.

**De Laval Steam Turbine Co.,  
Trenton, New Jersey**

3037

## MYERS SELF-OILING POWER PUMPS



Shallow and deep well types  
in a wide range of sizes for  
homes, farms, estates, mills,  
mines, factories and innumer-  
able other  
places. Recent  
improvements  
simplify instal-  
lation and  
maintenance  
and give them  
greater sales  
and service  
values than  
ever before.

Write or  
Wire.

**THE F. E. MYERS & BRO. CO., Ashland, O.**  
PUMPS—WATER SYSTEMS—HAY TOOLS—DOOR HANGERS

## MANISTEE CENTRIFUGAL P U M P S

Condensers—Chemical Evaporators—Gate Valves—Hydrants  
**MANISTEE IRON WORKS CO.**  
158 Turner Ave., MANISTEE, MICHIGAN

### SAND PUMPS

A wide range of types in sizes 4" to 15"  
For belt drive and for direct connection to motor  
Illustrated booklet on request

**GEORGIA IRON WORKS**  
AUGUSTA, GA.

## WORLD'S LARGEST WATER DEVELOPERS



An actual incident  
in Layne history.

## "They've ALL gone 'Duster'!"

A Mississippi town was proud of its new water system. But one man who saw it went to city officials.

"Those wells won't last," he told them.

"In this water strata, they can't last even two years."

The man was a hydrological engineer . . . One of Layne's experts on underground water conditions.

But the officials wouldn't believe him.

In less than two years, it happened.

The first well failed. That was like sticking a pin in a toy balloon. All the wells failed. The whole system went smash.

Water famine laid a parched hand on the town.

Long distance wires brought to Layne almost frantic calls for help.

Out went a fleet of trucks loaded with drillers and their tools. But even while they were on the way—

Fire struck. A public building went up in smoke.

That the town's new water system is a dependable Layne System of gravel-wall wells and Layne turbine pumps, perhaps is only incidental. *But this is worth remembering—*

Backed by 49 years experience, Layne is the recognized leader in design and construction of water systems (based on deep wells and turbine pumps) for industrial plants, municipalities and irrigation projects.

\*Drillers' slang for dry wells.

**LAYNE & BOWLER, INC.**  
MEMPHIS, TENNESSEE

**Layne Turbine Pumps . Well Water Systems**

— — — — — LAYNE & BOWLER, INC. . . . . . MEMPHIS, TENN.

Send me, without obligation, more information about Layne Systems.

Name . . . . .

Address . . . . .

City . . . . .

## Expand Markets for Cotton

The extension of markets and new uses for cotton assumed world-wide proportions during 1931, according to George A. Sloan, president of the Cotton-Textile Institute. In the following Mr. Sloan cites many instances to show that vigorous efforts in the United States to stimulate increased demand for cotton have given a new impetus abroad and particularly in Europe to this type of work:

"Although the American cotton manufacturers, at great expense, have pioneered in the development of new uses during the past five years, the results of their studies in this country are made available to consumers of cotton in Europe, South America, Canada and the Far East. The quest of new uses has developed into a worldwide movement with an increasingly helpful influence to be anticipated therefrom in effecting a greater consumption of cotton with enduring benefits to American cotton growers and manufacturers alike.

### Decorative Fabrics

"One of the outstanding recognitions of the progress made in the styling and designing of American cotton textiles is to be found in the recent acceptance by the Victoria and Albert Museum in London of a group of decorative cottons made in this country. The patterns selected represented a practical application of the 'art in industry' principle. Requests for Swatch Books of representative styled cottons published each season by the Institute have come from England, France, Germany, Switzerland, Sweden, Australia and Japan.

### Extending Cotton's Domain

"A new uses exhibit showing other newly-developed adaptations of various cotton fabrics for apparel as well as for household and industrial purposes was assembled by the Cotton-Textile Institute and during 1931 sent on an exhibition tour of textile centers in England, France, Holland, Switzerland, Egypt and Spain."

Through the offices of Norman S. Pearce, general secretary of the International Federation of Master Cotton Spinners and Manufacturers Associations, Manchester, England, the accomplishments in the United States in extending both new and established markets for cotton are transmitted at regular intervals to cotton manufacturers throughout Europe. Upon returning to England after a visit to America early this fall, Mr. Pearce made a tour of the continent, addressing practically all of the national groups of textile producers, to describe the new uses activities of the Cotton-Textile Institute in cooperation with the United States Departments of

Agriculture and Commerce. In the wake of this trip has come the announcement of the formation of an agency for the promotion of cotton textiles in Czechoslovakia and similar bodies have been proposed for Germany, France and England.

### New Uses

At a recent meeting in Wiesbaden, Germany, of the International Cotton Committee, made up of delegates from the predominant textile producing countries of Europe, these important customers of the American cotton farmer extended, by resolution, their full support to the movement for having American cotton bales covered with cotton fabric. This committee has made an appeal to the Secretary of Agriculture at Washington to urge the adoption of cotton baling material. Among the advantages cited for the latter is the elimination of the difficulty frequently encountered of spinning American cotton when there are inter-mixed with it fibres of the other material now commonly employed for bale covering.

As a result of the Cotton-Textile Institute's collaboration with foreign manufacturers, many of the new uses for cotton first evolved from experiments in this country, including fabrics for letterheads, advertising brochures, menus, radio broadcasting manuscripts and programs of all sorts, are now to be found abroad in commercial use. Similarly the decorative possibilities of wall paneling, recently developed in the United States through the use of thin veneers of fine woods mounted on layers of cotton sheeting, have resulted in many inquiries from abroad.

Following experiments with cotton fabrics in the construction of roads in South Carolina and Texas, this use for cotton has been subjected to a thorough investigation and study on the part of governmental or private interests in Spain, Germany, India, Egypt, Italy and England. In England an actual construction for test purposes was completed during 1931 in the Borough of Burnley, Lancashire.

### Europe's Contribution

For her part, Europe has contributed many constructive ideas that have helped stimulate public interest in America. English cotton manufacturers paved the way in the celebration during the spring of a National Cotton week which was followed in June by a similar event in the United States.

As might be expected, from French creative genius have come many new fashions in cotton for women's apparel. Late last summer the appearance on the

French and Italian Rivieras of cotton crash and denim trousers, novelty cotton jackets and lounging robes of cotton tweed, marked a revolutionary change in men's beachwear apparel. These new ideas are a natural complement to the cotton seersucker suit first brought out in the Southern states of this country.

The noted resourcefulness of Germany in research activities is likewise being turned to good account for cotton. As evidence of their growing interest in the development of new uses, important groups of German cotton manufacturers visited the United States during the past year for an exchange of views with American producers as to practical methods of procedure.

## \$1,500,000 TUNNEL CONTRACT

Pennsylvania Railroad Begins Work on Baltimore Unit

Marking another step in carrying out a \$22,500,000 construction program in Baltimore, in connection with the electrification of its lines between New York and Washington, the Pennsylvania Railroad has awarded contract to the Arundel Corporation, Baltimore, for boring the Hoffman street tunnel, to parallel an existing tunnel between Bond street on the east and Greenmount avenue on the west. This contract calls for an expenditure of approximately \$1,500,000, it is announced, and will require about a year for completion. Preliminary work has been under way for several weeks at the western entrance to the tube on Greenmount avenue, and a steam shovel has now been put on the job at the eastern end, at Bond street and Broadway.

Construction of bridges approaching the eastern end of the tunnel is also under way, the structures to cross Gay, Preston, Washington and Biddle streets and Loney's lane. Plans of the railroad include a second tunnel in the western section of the city, and bridges that will lead to it are now being built. They will cross Lafayette, Warwick and Frederick avenues and Garrison lane. In addition to the proposed tunnels, construction in the Baltimore area will include a new Calvert Street station, trackage, freight sheds, etc.

WASHINGTON MFG. CO., with headquarters in Nashville, will open a shirt factory in Milan, Tenn., about January 15. The Dickson Raincoat Co. and the Milan Box Factory will shortly resume operations.

cotton  
cotton  
cotton  
change  
these new  
to the  
ught out  
country.

Germany  
use being  
son. As  
erest in  
mportant  
acturers  
the past  
ws with  
practical

Work on  
ing out  
gram in  
the elec-  
New York  
nia Rail-  
the Arun-  
r boring  
parallel an  
street on  
e on the  
expendi-  
0, it is  
at a year  
ork has  
weeks at  
tube on  
n shovel  
at the  
l Broad-

roaching  
is also  
ross Gay,  
e streets  
e railroad  
western  
hat will  
t. They  
nd Fred-  
ne. In  
els, con-  
will in-  
n, track-

headquar-  
nirt fac-  
uary 15.  
e Milan  
e opera-

|              |              |
|--------------|--------------|
| SEWER PIPE   | FLUE LINING  |
| CULVERT PIPE | FIRE BRICK   |
| METER BOXES  | FIRE CLAY    |
| WALL COPING  | GRATE BACKS  |
| DRAIN TILE   | SEPTIC TANKS |



This stamp on Clay Products carries the same guarantee of quality as Sterling on silver.

We solicit your inquiries

### LEE CLAY PRODUCTS COMPANY

Office and Plant:

CLEARFIELD, Rowan County KENTUCKY



### ARTESIAN WELLS

ANY SIZE ANY DEPTH  
DRILLED ANYWHERE

VIRGINIA MACHINERY & WELL COMPANY, Inc.  
Dept. M. R. RICHMOND, VA.



### FIRE CLAY, SEWER PIPE, FLUE LINERS and WALL COPING

Write for Catalogue and Discounts

Owensboro Sewer Pipe Co. Owensboro, Ky.

### Manufacturing in the South

is growing at an amazing rate. Over six billion dollars are spent annually for materials, supplies, fuel and power to operate Southern factories. The utilization of its power resources; great hydroelectric sites; fuel supply of coal, lignite, gas and oil is rapidly advancing Southern industry.

MANUFACTURERS RECORD  
BALTIMORE, MARYLAND

# MATHEWS MODERNIZED HYDRANTS

... Defy the Grip of Ice  
and the Ravages of Rust!

MATHEWS HYDRANTS are always ready for instant use in any weather! A compartment, sealed against moisture, houses the Operating Thread to protect it against ice and rust.

The wrought iron stem is bronze bushed at the stuffing box to prevent undue wear on the packing.

The positive and automatic drain valve, and the low level of the drain orifice, assure complete drainage of the hydrant after use. No water remains to freeze or cause rust.

Write for the Mathews Hydrant booklet. It shows the exclusive features that have made the Mathews a leader for more than half a century. Over 350,000 in use throughout the world.



**R. D. WOOD & CO., PHILA., PA.**  
**ESTABLISHED IN 1803**

CAST IRON PIPE—SAND SPUN (CENTRIFUGALLY CAST)  
REG. U. S. PAT. OFF.

AND PIT CAST—GATE VALVES—VALVE BOXES

## \$16,000,000 TELEPHONE EXPENDITURES

**Chesapeake and Potomac Companies' Program for 1932 Calls for \$2,500,000 Greater Expenditure Than in 1931**

Washington, D. C.—Plans of the Chesapeake and Potomac Telephone Companies for expanding the systems serving the District of Columbia, Maryland, Virginia and West Virginia, call for an expenditure of \$16,000,000 in 1932, according to President Lloyd B. Wilson, which is about \$2,500,000 more than expenditures in 1931 for construction projects. Under the 1932 program, the company estimates that there will be a net gain of 32,000 telephones, as compared with approximately 22,500 in 1931. These figures are based upon the assumption that 198,500 telephones will be installed during the year and 166,500 telephones removed from service. There are at present 673,359 telephones in service in this territory, and it is estimated that users will make 1,165,000,000 calls during the year, recording an increase of 5 per cent as compared with 1931.

District of Columbia expenditures for 1932 are expected to reach \$4,900,000, to embrace the following: \$2,250,000 for telephones and private branch exchange equipment on subscribers' premises; \$1,500,000 for central office equipment; \$900,000 for outside plant, and \$250,000 for land and buildings. It is estimated that 54,000 telephones will be installed during the year and 44,000 removed.

The construction program for Maryland calls for an expenditure of \$4,450,000, including \$2,150,000 for outside plant extensions consisting of underground conduit and cable, pole lines and wire; \$1,800,000 for telephones and private branch exchange equipment on subscribers' premises; \$450,000 for central office equipment, and \$50,000 for land and buildings. Telephone installations during the year are estimated at 56,000 and removals at 47,000.

Additions and betterments to the system in Virginia will involve an estimated outlay of \$4,250,000 in 1932, major construction projects to include: Outside plant extensions consisting of underground conduit and cable, pole lines and wires, to cost \$1,750,000; telephones and private branch equipment on subscribers' premises, \$1,250,000; central office equipment, \$950,000, and land and buildings, \$300,000. It is estimated that 53,000 telephones will be installed during the year and 44,000 telephones removed.

Capital expenditures of \$2,400,000 are contemplated in West Virginia during 1932, to include \$950,000 for telephones and private branch exchange equipment

on subscribers' premises; \$900,000 for the construction of underground conduit and cable, pole lines and wire in several sections of the state; \$400,000 for central office equipment and additions, and \$150,000 for land and buildings. Estimates indicate that 35,500 telephones will be installed in 1932 and 31,500 telephones removed.

templated, will carry the product of Louisiana, Texas and Oklahoma to Kansas City, St. Louis and Washington, D. C. Petroleum resources are reflected in Southern mineral production, which has increased 59 per cent since 1920, as against 16 per cent for the rest of the country.

Wage earners have participated equally in the development. The average increase in the South over a period of 10 years is 10 per cent, and the rest of the country 4.7 per cent. The introduction of labor saving machinery has not involved unemployment, but contributed to the growth of factory payrolls.

Electric power production increased 191.5 per cent in the South in the past 10 years, as against an increase of 106 per cent in the entire United States, exclusive of the South. Industry inevitably follows the power line. This is shown by the increase of 12 per cent in the value of building contracts in the South during the past seven years, as compared with an increase of eight per cent for the rest of the country.

Registration of trucks and tractors increased 570 per cent in the South in 10 years, as compared with a general increase of 260 per cent. The South has shown an increase of more than double the rate for total registration.

The South increased its number of airports and landing fields by 21.5 per cent in two years, as compared with 18 per cent in other states.

The South is the only section to show a distinctive scientific advance in the production of rayon and chemical products. Southern colleges increased their attendance 85 per cent in the past eight years as compared with 73 per cent for the other states. Normal schools and teachers' colleges increased their enrollment 81 per cent for the same period, as against less than 65 per cent elsewhere in the nation. The cultural side of the South's development is keeping pace with its industrial growth.

Memphis continues to be the chief hardwood market in the world. Southern products are distributed throughout the world, and while we supply the vital necessities to the remote parts of the earth, the South can live in peace and in the midst of plenty from its own resources.

The difference between the liabilities and the assets of the South makes it the favored section of the nation. We need to think more of these things and to set ourselves to the task of developing our opportunities by turning the South's resources into things that make for prosperity and progress. We need to become "South-minded."

## Contract for 10-Story Apartment

The Consolidated Engineering Co., Baltimore, has been awarded contract to erect a 10-story apartment building at 33rd and Charles streets, Baltimore, for Gunn, Williamson & Guy. The structure will be 130 by 53 feet. Frederick A. Fletcher is the architect; Kubitz & Koenig, structural engineers, and J. Hamilton Walker, mechanical engineer, all of Baltimore.

Pipe lines under construction, or con-

January 7, 1932

69

duct of  
to Kan-  
on, D.C.  
ected in  
which has  
1920, as  
t of the

ed equal-  
verage in-  
od of 10  
st of the  
duction  
not in-  
buted to

increased  
e past 10  
106 per  
s, exclu-  
inevitably  
s shown  
t in the  
the South  
ompared  
cent for

ctors in-  
ith in 10  
neral in-  
outh has  
n double

er of air-  
per cent  
h 18 per

to show  
e in the  
cal prod-  
ised their  
ast eight  
cent for  
ools and  
ir enroll-  
period, as  
elsewhere  
le of the  
pace with

he chief  
Southern  
thout the  
the vital  
s of the  
ce and in  
own re-

liabilities  
xes it the  
We need  
s and to  
developing  
e South's  
for pros-  
o become

partment

Co., Bal-  
contract to  
ilding at  
more, for  
structure  
lerick A.  
Kubitz &  
J. Ham-  
neer, all

## FROM 3 TO 11 MONTHS

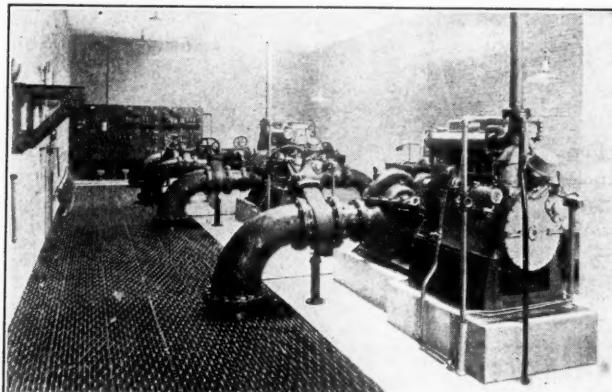
of 18 to 24 hour service is a good record for any kind of prime mover

Sterling  
High  
Duty



Internal  
Combustion  
Engines

12 to 565 BHP  
Gas or Gasoline



Bath St. Pumping station, City of Providence, R. I.  
2 DeLaval centrifugal pumps each rated 2000 GPM, 98 ft.  
head, 1200 RPM Sterling 4 cyl. 120 HP engine.

Sterling engines have taken emergency pumping duty that required this reliable running at 1200 R. P. M. and have been able to continue indefinitely.

## STERLING ENGINE COMPANY

Home Office and Plant:  
1270 Niagara Street  
Buffalo, N. Y.

Dept. C-7

900 Chrysler Building,  
New York, N. Y.



## Ingalls Location

Ingalls manufacturing plants are located in the two principal steel centers of the United States — Birmingham and Pittsburgh. This gives Ingalls access to highest quality raw materials, helps assure prompt shipment of orders calling for special material, and guarantees lowest prices the steel market affords. In addition, railroad facilities at these two points permit economical routing of shipments to all sections and aid prompt delivery.

Inquiries are solicited for all kinds of structural steel, standard buildings, bridges, airplane hangars, shapes, storage tanks and warehouse steel.

### The Ingalls Iron Works Company

Main Office and Plants: Birmingham, Ala.  
Eastern Plant: Verona, Pa. (in Pittsburgh Dist.)  
Branch Sales Offices: New York, New Orleans,  
Tampa, Charlotte, N. C., Tulsa, Jackson, Miss.

••• STANDARD •••  
STEEL BUILDINGS



### ONE CLEAR FACT

... Out of a tangle of claims about gasoline . . . one clear fact stands out . . .

### THAT GOOD GULF GASOLINE

is bought more places by more people in Gulf's 27 states because car owners buy on performance . . . the only fact that counts.

**GULF REFINING CO.**

### Freight Car Requirements

Shippers of the country, through estimates submitted to the Shippers' Regional Advisory Boards and issued by the American Railway Association, anticipate that carload shipments of the 29 principal commodities in the first quar-

ter of 1932 will be approximately 5,241,746 cars, a reduction of 370,415 cars or 6.6 per cent below the corresponding period in 1931.

The forecast for carloadings in the Southern states makes a better showing than for the country as a whole.

Anticipated freight loadings for 29

| Region                  | Actual<br>Carloads | Estimated<br>Carloads | Per Cent<br>Decrease |
|-------------------------|--------------------|-----------------------|----------------------|
|                         | 1931               | 1932                  |                      |
| New England .....       | 141,498            | 125,770               | 11.1 Decrease        |
| Allegheny .....         | 717,353            | 643,238               | 10.3 "               |
| Atlantic States .....   | 637,494            | 611,289               | 4.1 "                |
| Central Western .....   | 271,171            | 231,536               | 14.6 "               |
| Pacific Coast .....     | 204,016            | 192,906               | 5.4 "                |
| Pacific Northwest ..... | 160,902            | 153,369               | 4.7 "                |
| Great Lakes .....       | 304,808            | 289,114               | 5.1 "                |
| Ohio Valley .....       | 625,789            | 612,365               | 2.1 "                |
| Mid-West .....          | 1,000,616          | 911,558               | 8.9 "                |
| Northwest .....         | 191,868            | 157,121               | 18.1 "               |
| Trans-Mo-Kansas .....   | 336,012            | 326,300               | 2.9 "                |
| Southeast .....         | 631,326            | 596,356               | 5.5 "                |
| Southwest .....         | 389,308            | 390,824               | .4 Increase          |
| Total .....             | 5,612,161          | 5,241,746             | 6.6 Decrease         |

The estimate in detail as to what transportation requirements are anticipated for the various commodities in the

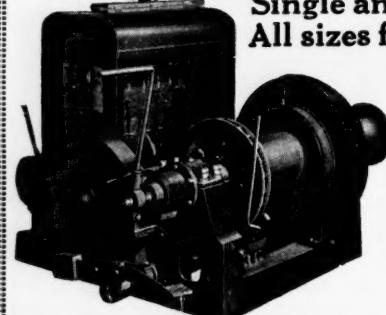
first quarter of 1932 compared with the same period in 1931 follows:

| Commodity  | Actual<br>Carloads | Estimated<br>Carloads | Per Cent<br>Decrease |
|--|--------------------|-----------------------|----------------------|
|  | 1931               | 1932                  |                      |
| Grain, All .....   | 296,233            | 257,294               | 13.1                 |
| Flour, Meal and Other Mill Products.....   | 227,669            | 222,837               | 2.1                  |
| Hay, Straw and Alfalfa.....  | 54,703             | 48,123                | 12.0                 |
| Cotton .....   | 40,367             | 40,368                | 0                    |
| Cotton Seed and Products, Except Oil.....  | 36,884             | 40,212                | *9.0                 |
| Citrus Fruits .....  | 51,632             | 47,342                | 8.3                  |
| Other Fresh Fruits .....   | 48,275             | 54,947                | *13.8                |
| Potatoes .....   | 67,863             | 63,250                | 6.8                  |
| Other Fresh Vegetables.....  | 71,097             | 66,653                | 6.3                  |
| Live Stock .....   | 280,260            | 278,883               | .5                   |
| Poultry and Dairy Products.....  | 38,081             | 36,525                | 4.1                  |
| Coal and Coke.....   | 2,088,414          | 1,970,859             | 5.6                  |
| Ore and Concentrates.....  | 76,866             | 67,894                | 11.7                 |
| Gravel, Sand and Stone.....  | 250,934            | 221,472               | 11.7                 |
| Salt .....   | 28,481             | 27,407                | 3.8                  |
| Lumber and Forest Products.....  | 477,960            | 430,867               | 9.9                  |
| Petroleum and Petroleum Products.....  | 508,409            | 510,608               | *4                   |
| Sugar, Syrup and Molasses.....   | 37,759             | 36,113                | 4.4                  |
| Iron and Steel.....  | 312,745            | 273,716               | 12.5                 |
| Machinery and Boilers.....   | 31,245             | 26,577                | 14.9                 |
| Cement .....   | 78,267             | 67,100                | 14.3                 |
| Brick and Clay Products.....   | 70,990             | 62,918                | 11.4                 |
| Lime and Plaster.....  | 32,110             | 27,918                | 13.1                 |
| Agricultural Implements and Vehicles, Other than<br>Automobiles .....  | 21,531             | 12,973                | 39.7                 |
| Automobiles, Trucks and Parts.....   | 125,619            | 127,556               | *1.5                 |
| Fertilizers, All Kinds.....  | 111,554            | 86,018                | 22.9                 |
| Paper, Paperboard and Prepared Roofing.....  | 78,283             | 69,630                | 11.1                 |
| Chemicals and Explosives.....  | 22,115             | 22,599                | *2.2                 |
| Canned Goods—All Canned Food Products, (Included<br>Catsup, Jams, Jellies, Olives, Pickles, Preserves, etc.) | 45,815             | 43,078                | 6.0                  |
| Total to all commodities.....  | 5,612,161          | 5,241,746             | 6.6                  |

\*Increase.

### DAKE HOISTS-Gasoline & Electric

Single and Double Drum  
All sizes from 2 to 27 h.p.



DAKE Engine Company

Are convenient, efficient, dependable and enduring. Rigid, sturdy construction insures lasting alignment. Interchangeable parts. Alemite lubrication. Low maintenance cost.

Send for catalog  
and prices

Grand Haven  
Michigan

### EVERY THURSDAY

is publication day of the  
MANUFACTURERS RECORD.

Changes of copy must reach us eight  
days in advance, or fifteen days in  
advance if proofs are requested.

MANUFACTURERS RECORD  
Baltimore, Maryland

principal commodities in the first quarter of 1932 compared with the corresponding period in 1931 and the percentage of decrease are shown in the accompanying tables.

### Narcotic Farm Foundation Bid

Lexington, Ky.—Low bid to construct foundations for Federal Narcotic farm buildings here has been submitted to the Treasury Department, Washington, Jas. A. Wetmore, Acting Supervising Architect, by the Raymond Construction Company of Bowling Green, Ky., at \$217,341. The entire cost of this project is estimated at \$5,000,000.

### Ask Foundation Bids

Washington, D. C.—Bids will be opened January 13 in the office of Jas. A. Wetmore, Acting Supervising Architect, Treasury Department, for the construction of foundations for the new \$8,750,000 Archives Building here. The building will be 7 stories and basement. Contract for preliminary excavation was recently awarded to Jarboe & Houghton, Mechanicsville, Md. John Russell Pope is the architect; H. G. Balcom, consulting engineer, and Clyde R. Place, mechanical engineer, all of New York.

### \$4,167,000 Three-Year Contract

The Board of Awards, Baltimore, has negotiated a contract with the Consolidated Gas Electric Light and Power Company, Baltimore, to furnish electric current and gas for city service over a period of three years. The contract covers current for 21,105 street lamps and gas for 17,299 lamps, in addition to current for municipal buildings, parks, fire and police stations, highway traffic signals and public buildings. It also includes fixtures, cables and the maintenance of street electric lamps, the city furnishing posts. A total of \$4,167,000 is involved.

quarter  
bonding  
e of de-  
panying

in Bid

construct  
the farm  
to the  
n, Jas.  
Architect  
Com-  
17,341.  
s esti-

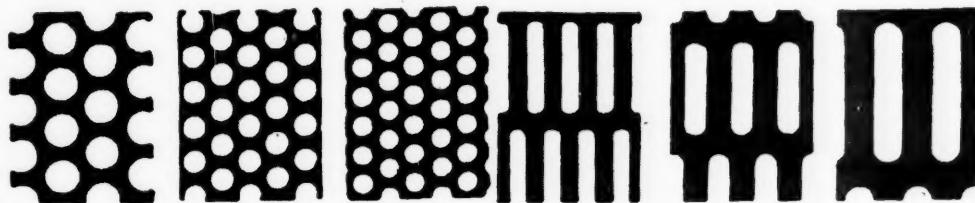
ill be  
of Jas.  
Archit-  
the con-  
the new  
. The  
ment.  
on was  
ughton,  
l Pope  
onsult-  
ee, me-  
rk.

contract  
re, has  
onsolid-  
Power  
electric  
over a  
et cov-  
ops and  
to cur-  
ks, fire  
tic sig-  
also in-  
aintenance  
the city  
167,000

Y

## PERFORATED METAL SCREENS OF EVERY SORT—FOR EVERY PURPOSE

All sizes  
and  
shapes  
of Holes



Everything  
in  
Perforated  
Metal

The Harrington & King Perforating Company

5631 Fillmore St., Chicago, Ill., U. S. A.

New York Office: 114 Liberty Street

### MUNDT PERFORATED METALS

Any metal, any size, any perforation, for  
any use. Large stock available  
for urgent need.

43 years' experience enables us to give  
superior service. MUNDT'S customers are  
always satisfied.



Charles Mundt & Sons  
490 JOHNSTON AVE., JERSEY CITY, N. J.

### Perforated Metals SCREENS OF ALL KINDS

Chicago Perforating Co.  
2445 West 24th Place  
Tel. Canal 1459 CHICAGO, ILL.



**IF YOU WANT TO GET—**  
*Southern Business  
Advertise in the  
MANUFACTURERS RECORD*

Established 1850  
**A. K. ROBINS & COMPANY**  
CANNING MACHINERY AND SUPPLIES  
For Fruits, Vegetables, Sea Food, Etc.  
CANNING EQUIPMENT  
VALVE CONDENSERS  
BALTIMORE

PERFORATED METALS HEADQUARTERS  
Cotton Seed Oil Works a Specialty  
Send for Samples

ERDLE PERFORATING CO. Rochester, N. Y.

**THE GEORGIA MARBLE COMPANY**  
Producers and Manufacturers of  
**GEORGIA MARBLE**

Tate, Georgia  
Atlanta Chicago Cleveland Dallas New York

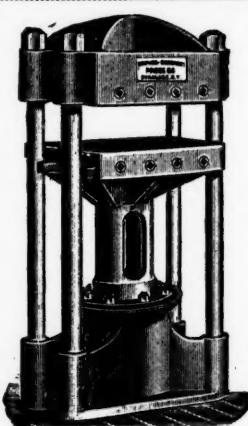
**STEAM PLATE  
PRESSES**  
BY HAND OR POWER  
HYDRAULIC OR KNUCKLE  
JOINT

Sizes 12"x12" to 48"x120"

Also Pressure Pumps, Accumulators, Hydraulic Valves and Fittings, and Presses for many other purposes. Let us tell you more about them.

Established 1872

DUNNING & BOSCHERT PRESS CO.  
INCORPORATED  
386 W. Water St. SYRACUSE, N. Y.



**DETROIT  
UNDERFEED  
STOKERS**

for every service

**Detroit Stoker Company**  
General Motors Bldg - Detroit.

**IRON PIPE RAILINGS**

When in the market for Pipe Railing for Stairs, Bridges or Retaining Walls, send us your drawings. We can quote you prices that will be worth considering.

**PIPE RAILING CONSTRUCTION CO., Long Island City, New York**

## FINANCIAL NEWS

### Bond Issues Proposed

Ala., Anniston—Calhoun County votes Jan. 19 on \$76,000 court house bonds.

Ky., Paducah—McCracken County Commsr. authorized issuance of \$190,000 funding bonds.

Md., Cumberland—City, Samuel Wertheimer, Commr. of Finance and Revenue, opens bids Jan. 11 for \$400,000, 4½%, \$1000 denom. water improvement bonds.

Md., Rockville—Montgomery County Commsr., Lacy Shaw, Pres., reported, authorized issuance of \$1,000,000 school bonds.

Md., Smithsburg—City voted \$11,480 certificates of indebtedness.

Md., Upper Marlboro—Prince George's County Bd. of Education, Nicholas Orem, Supt. of Schools, opens bids Jan. 12 for \$275,000, 4½%, \$100 to \$1000 denom. bonds.

Mo., Doniphan—Ripley County, W. A. Randel, Clk., probably vote early in 1932 on \$67,500 bonds for retiring outstanding warrants.

Mo., Springfield—City defeated \$200,000 sewer bonds. 12-10

Mo., University City, St. Louis—City, E. D. Ruth, Jr., Mayor, votes Jan. 26 on \$500,000 street lighting bonds.

N. C., Greensboro—City Council adopted resolution authorizing sale of \$500,000, not to exceed 6%, refunding bonds; bids to be asked by Local Government Comsnn., Chas. M. Johnson, Raleigh.

N. C., Lenoir—Caldwell County Commsr. plan offering \$65,000 bonds: \$45,000, road and bridge deficit; \$20,000, school deficit.

Tenn., Shelbyville—City, C. C. Smith, City Sec., may sell \$23,000, 5% refunding bonds at private sale.

Tex., Cotulla—LaSalle County, G. A. Welhausen, County Judge, received no bids for \$600,000 5% road bonds. 11-26

Tex., Orange—Orange County voted \$541,000 drainage bonds. 12-17

Tex., Perryton—Ochiltree County voted \$400,000 road bonds. 12-10

Tex., Perryton—City votes Jan. 19 on \$172,389, 6% refunding bonds.

Tex., Raymondville—City received no bids for \$128,000 light plant revenue bonds. 12-24

Tex., West University Place, Houston—City, H. B. Schlesinger, Mayor, probably vote on \$40,000 city hall bonds early in 1932.

### Bond Issues Sold

Miss., Starkville—City sold \$21,000, 6% refunding bonds to Saunders & Thomas, Memphis, Tenn.

Mo., Eminence—Shannon County sold \$26,000, 4½% judgment funding bonds to Bank of Bismarck, Bismarck.

Tenn., Newport—Cocke County sold \$85,000 court house bonds to Little, Wooten & Co., Jackson, at 98.00.

Tenn., Memphis—Shelby County Court, W. S. McCormick, Chmn., sold \$300,000, 5%, \$1000 denom. school revenue notes to Union Planters National Bank & Trust Co. 12-24

Tex., Angleton—Brazoria County Road Dist. 30 recently sold \$10,000, 5½% road bonds to First State Bank of Sweeny, at par.

Tex., Bay City—City sold \$156,000, 5½% funding bonds to B. F. Dittmar Co., San Antonio, and H. C. Burt & Co., Houston, jointly.

Tex., El Paso—City sold \$781,977, 4¾% funding bonds to State National Bank, and El Paso National Bank, jointly.

Tex., Port Neches—City recently sold \$18,000, 6% funding bonds to H. C. Burt & Co., Houston.

### New Financial Corporations

Miss., Lexington—Holmes County Bank & Trust Co., capital \$50,000, being opened with W. K. Durden, Chmn. of Bd., and Morris Lewis, Pres.

Okl., Commerce—First State Bank of Commerce, capital \$15,000, chartered; M. R. Tidwell, R. J. Tuthill.

Tenn., Ripley—First State Bank, capital \$25,000, chartered; R. M. Prichard, J. E. Pierson.

Bank of Marianna, Ben L. Ross, Pres.

Marianna, Ark., and Lee County National Bank, J. B. Daggett, Pres., Marianna, merged.

Colorado National Bank, J. M. Thomas, Pres., and City National Bank, C. H. Lasky, pres., both Colorado, Tex., merged as City National Bank of Colorado, with C. H. Lasky, Pres.

Columbia County Bank, J. O. Hutcheson, Pres., Magnolia, Ark., merging with People's Bank, N. J. Gant, Pres., Magnolia.

Belle Haven Bank, Wm. E. Hyslop, V.-Pres., Belle Haven, Va., merged with People's Trust Bank, E. D. Brown, Pres., Exmore, Va.

Bank of Odessa, J. C. Calfee, Pres., Odessa, Mo., acquired Bank of Bates City, B. L. Groom, Pres., Bates City, Mo.

### Norfolk and Western Report

For the first 11 months of 1931, net income of the Norfolk & Western Railway Company totaled \$19,683,586, equivalent after preferred dividend requirements to \$13.39 a share on 1,406,483 shares outstanding. This compares with net earnings of \$29,089,794, or \$20.18 a share for the similar period of 1930. Gross income for November of this year was \$6,302,146, as compared with \$7,722,913 for November, 1930, and net operating income \$1,778,581, as compared with \$2,517,510. Surplus after charges, amounted to \$1,586,309, as against \$2,298,256 for November, 1930.

### Investments Increased \$10,000,000

Total increase in investments of Seaboard Public Service Co. subsidiaries, operating in 696 communities in six Southeastern states, including construction and properties purchased for the year ending December 31, 1931, approximates \$10,000,000. This increase is almost evenly divided between construction and purchased properties.

Through new purchases, subsidiaries consolidated their systems by taking over adjacent properties.

Through new construction, subsidiaries took advantage of market conditions in order to build for future power demands. They will thus be in a position to quickly realize advantages of any improvement in general business conditions.

For the first eleven months of the year, Seaboard subsidiaries expended \$4,661,944 for new construction alone.

### Future of Rural Communities

(From the Spartanburg Herald)

The motor car, the improved road and the drift from the country to the larger towns are factors destroying small towns and rural centers. It has been assumed that they were passing never to be restored. But in the changes that have come about in recent months, there is a silver lining for this cloud. These communities, many of them, will take on new activity as the centers of agricultural regions being restored through diversified farming and cooperative methods of operation. They will become marketing centers, perhaps, where milk depots will be established, packing houses for orchards operated, creameries or depots for dairy products established, and roadside markets be opened for the produce of the whole community of farms.

When the country around about these communities becomes productive the center will reflect that activity. Buyers will visit the centers and the individual producer will no longer seek the buyer in the larger towns. We see the beginning of this in the buyers attracted to the peach orchards of Spartanburg County in recent years.

### Sunrise—1932

The Universal Fruit Base Company, Ltd., New York City, writes:

Nineteen Thirty-One is gone.

We shall never see its like again.

We have taken our punishment and waded through it like men; a little stronger and a bit wiser.

Tomorrow begins a new year.

We are the most favored of all countries.

We have the largest market on the globe.

We earn more and spend more than any other people.

Our grief is behind us; the sun is just rising on happy, prosperous days to come.

Nothing can keep America down.

We are optimistic by nature and builders by habit.

Everything from now on will be up.

Nineteen Thiry-Two will reward us for all our efforts.

Therefore, we have every reason to be happy.

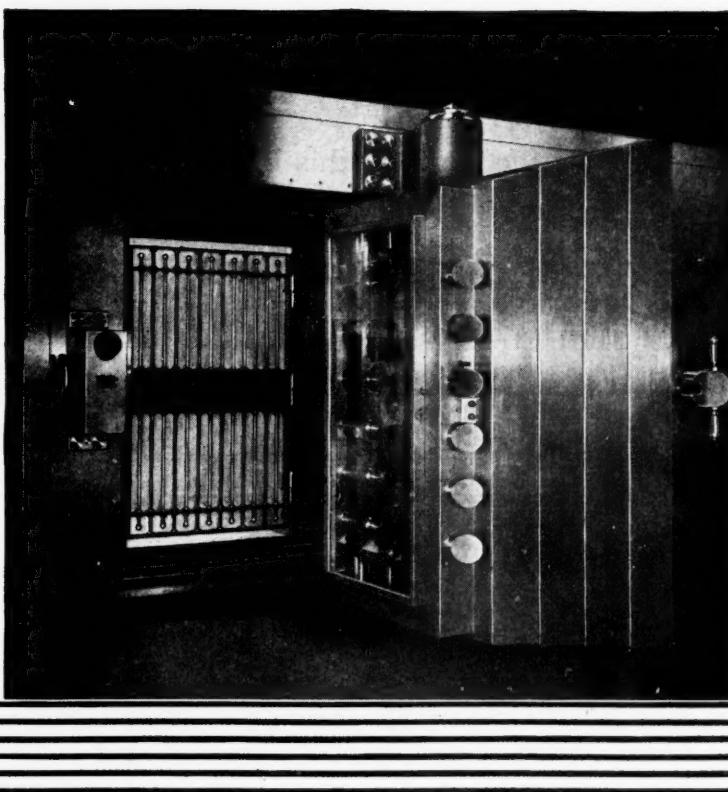
### Winnisboro Mills Reorganized

Winnisboro, S. C.—The Winnisboro Mills, owned by the United States Rubber Co., have reorganized as a South Carolina corporation with a capital stock of \$750,000. Under the terms of charter the company is authorized to carry on all operations relating to the manufacture of textiles, fabrics and by-products. Officers include Harry C. Hand, president; William M. Stevens, secretary, and A. Roy Myers, treasurer. The board of directors is composed of the officers and D. P. Mitchell, Jr., R. J. Gorman, D. H. Jackman and George V. Reilly.

WELWOOD-NORWICH RIBBON MILL, Murfreesboro, Tenn., will open within the next few weeks, providing employment for about 150 persons.



**ONE OF THE  
17  
DOORS IN THE  
WORLD'S  
LARGEST  
VAULT**



**T**HE YORK Vault now being installed in the Bank of Japan at Tokyo is the largest ever built. It comprises in fact two vaults, each 187 ft. by 83 ft.

Entrance to this massive structure is guarded by seventeen doors. Six of them are 36" and eleven are 24" in thickness of solid metal. Weighing

approximately 3500 tons, this entire vault equipment was built in the York factory at York, Pennsylvania and is being installed in the Bank of Japan at Tokyo by York engineers.

★ ★ ★

Whether your bank is large or small, we invite you to consult with us when planning your vault requirements. We will place at your disposal the same experience and facilities that have earned for York a position of world-wide preeminence.

# **YORK SAFE AND LOCK CO.**

● **YORK, PENNSYLVANIA** ●

MANUFACTURERS AND BUILDERS OF THE WORLD'S GREATEST VAULTS

NEW YORK  
BALTIMORE  
BOSTON  
PHILADELPHIA  
SEATTLE

ST. LOUIS  
SAN FRANCISCO  
NEW HAVEN  
HOUSTON  
CHICAGO



CLEVELAND  
WASHINGTON  
LOS ANGELES  
PITTSBURGH  
MONTREAL

HONOLULU  
PARIS  
HAVANA  
TOKYO  
SHANGHAI

— FIRE AND BURGLAR PROOF SAFES AND CHESTS —



Bids close January 18, 1932.

TREASURY DEPARTMENT, office of the supervising architect, Washington, D. C., December 22, 1931.—SEALED BIDS in duplicate, subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., January 18, 1932, for furnishing all labor and materials and performing all work for the remodeling and enlarging of the U. S. post office and court house at Cape Girardeau, Mo. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding one set, may be obtained by any satisfactory general contractor at this office in the discretion of the supervising architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close January 21, 1932.

TREASURY DEPARTMENT, office of the supervising architect, Washington, D. C., December 24, 1931.—SEALED BIDS, in duplicate, subject to the conditions contained herein, will be publicly opened in this office at 2 p. m., January 21, 1932, for furnishing all labor and materials and performing all work for new brass water piping, electrically operated drinking fountains, etc., at the U. S. post office, Rocky Mount, N. C. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications may be obtained from the custodian at the building or at this office, in the discretion of the supervising architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close January 21, 1932.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., December 30, 1931—SEALED BIDS, in duplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., January 21, 1932, for furnishing all labor and materials and performing all work for the excavation and concrete foundations of the U. S. post office, etc., at Allentown, Pa. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding 3 sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$15.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

Bids close January 12, 1932.

### Safety Gates

DEPARTMENT OF PUBLIC WORKS  
STATE OF MARYLAND  
STATE ROADS COMMISSION

#### NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for installation of safety gates as follows:

Dorchester County, Contract No. D-85-17—Complete installation of two safety gates for the bridge over Cambridge Creek at Cambridge

will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Sts., Baltimore, Maryland, until 12 M. on the 12th day of January, 1932, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans will be furnished by the Commission upon application and cash payment of \$1.00, for each separate project, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check, payable to the State Roads Commission of Maryland, as required by Sec. 6, Chapter 539, Acts of 1931, of the amount as set forth in the proposal form.

The successful bidder will be required to give bond, and comply with the Acts of the General Assembly of Maryland, respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 22nd day of December, 1931.

G. CLINTON UHL, Chairman.

L. H. STEUART, Secretary.

## PROPOSALS

Bids close January 27, 1932.

TREASURY DEPARTMENT, office of the supervising architect, Washington, D. C., December 28, 1931.—SEALED BIDS, in duplicate, subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., January 27, 1932, for furnishing all labor and materials and performing all work for the construction of the U. S. post office at Troy, Ohio. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding three sets, may be obtained at this office, in the discretion of the supervising architect, by any satisfactory general contractor, and provided a deposit of \$15.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

Bids close January 12, 1932.

### Road and Bridge

Richmond, Va.

Sealed bids will be received 10 A. M. Tuesday, January 12, 1932, Va. Dept. of Highways, State Office Bldg., for the construction of Rt. 725, Project 742, County Fairfax, 3.089 miles of gravel, Cu. Yds. excavated 32,515 cu. yds. gravel 14,977 & Br. over Dogue Creek, Cu. Yds. A Conc., 227.9 lbs. reinf. steel 25,790 lbs. structural steel 47,400 lin. ft. piles 2,480. Details obtainable upon request.

Bids close January 19, 1932.

### Road Improvements and Bridge

Dover, Del.

Sealed proposals will be received by the State Highway Department at its office, Dover, Del., until 2:00 o'clock P. M. Eastern Standard Time, January 19, 1932, and at that place and time publicly opened, for contracts involving the following approximate quantities:

CONTRACT 229  
GUM CROSS ROADS-MIDDLEFORD  
(9 FT. CONC.), 3.74 MILES  
2 Acres Clearing  
3½ Acres Grubbing  
13,000 Cu. Yds. Excavation  
6,000 Cu. Yds. Borrow  
3,750 Cu. Yds. Concrete Pavement  
2,500 Lin. Ft. Exp. Jt.  
300 Cu. Yds. Class A Concrete  
14,500 Lbs. Reinforcement  
25,000 Lbs. Structural Steel  
400 Lin. Ft. 15 in. C. M. Pipe  
100 Lin. Ft. 15 in. R. C. Pipe  
160 Lin. Ft. 18 in. R. C. Pipe  
4,000 Lin. Ft. Wood Shoulder Curb  
3,200 Lin. Ft. Timber Piling  
4M Ft. B. M. Sheet Piling

CONTRACT 232  
STOCKLEY-ZOAR CAMP GRAVELING  
2.75 MILES

5 Acres Clearing  
4 Acres Grubbing  
7,000 Cu. Yds. Excavation  
10,000 Cu. Yds. Borrow  
4,500 Cu. Yds. Gravel  
140 Cu. Yds. Class A Concrete  
9,000 Lbs. Reinforcement  
240 Lin. Ft. 15 in. C. M. Pipe  
60 Lin. Ft. 15 in. R. C. Pipe  
30 Lin. Ft. 18 in. R. C. Pipe  
1,500 Lin. Ft. Timber Piling  
2M Ft. B. M. Sheet Piling

CONTRACT 235  
SIDEWALK, DOVER TO STATE COLLEGE, 5255 FEET

1,200 Cu. Yds. Excavation  
400 Cu. Yds. Borrow  
21,000 Sq. Ft. Concrete Sidewalk  
5 Cu. Yds. Class A Concrete  
1,000 Lbs. Catch Basin  
30 Lin. Ft. 18 in. R. C. Pipe  
15 Lin. Ft. 30 in. R. C. Pipe

CONTRACT 236  
SIDEWALK, NAAMANS CREEK ROAD-PHILADELPHIA PIKE TO HICKMAN ROAD, 1250 FEET

250 Cu. Yds. Excavation  
100 Cu. Yds. Borrow  
5,000 Sq. Ft. Concrete Sidewalk  
5 Cu. Yds. Class A Concrete  
1,000 Lbs. Catch Basin  
20 Lin. Ft. 18 in. R. C. Pipe

CONTRACT 237  
AUGUSTINNE BRIDGE TO CONCORD PIKE—GRADING—1.00 MILES

23,000 Cu. Yds. Excavation  
1,000 Cu. Yds. Rock Excavation  
80 Lin. Ft. 15 in. R. C. Pipe

40 Lin. Ft. 18 in. R. C. Pipe  
60 Lin. Ft. 24 in. R. C. Pipe

### CONTRACT 238

SIDEWALK, MIDDLETOWN-ST. ANNE'S CHURCH, 2700 FEET  
1,200 Cu. Yds. Excavation  
1,200 Cu. Yds. Borrow  
11,000 Sq. Ft. Concrete Sidewalk  
15 Cu. Yds. Class A Concrete  
500 Lbs. Reinforcement  
500 Lbs. Catch Basin  
50 Lin. Ft. 15 in. R. C. Pipe

### CONTRACT 239

KENNETH PIKE SIDEWALK TO GREENVILLE, 6275 FEET  
400 Cu. Yds. Excavation  
3,000 Cu. Yds. Borrow  
24,000 Sq. Ft. Concrete Sidewalk  
5 Cu. Yds. Class A Concrete  
1,500 Lbs. Catch Basin  
60 Lin. Ft. 15 in. R. C. Pipe

### CONTRACT 240

PORTSVILLE-BETHEL CUTOFF  
1.20 MILES  
2 Acres Clearing  
1 Acre Grubbing  
25,000 Cu. Yds. Borrow  
140 Cu. Yds. Class A Concrete  
9,000 Lbs. Reinforcement  
100 Lin. Ft. 15 in. C. M. Pipe  
40 Lin. Ft. 15 in. R. C. Pipe  
1,200 Lin. Ft. Timber Piling  
2M Ft. B. M. Sheet Piling

Performance of contract shall commence within ten (10) days after execution of the contract and be completed as specified.

All labor employed on these contracts shall be legal residents of the State of Delaware, and special provisions for use of machinery is provided in each proposal.

Monthly payments will be made for 90 per cent of the construction completed each month.

Bidders must submit proposals upon forms provided by the Department.

Each proposal must be accompanied by a surety bond, certified check or money to the amount of at least ten (10) per centum of the total amount of the proposal.

The envelope containing the proposal must be marked "Proposal for the construction of State Highway Contract No. ...."

The contract will be awarded or rejected within twenty (20) days from the date of opening proposals.

The right is reserved to reject any or all bids.

Complete sets of plans and specifications may be obtained after January 12, 1932, upon receipt of two dollars (\$2.00) for each contract, which amount will not be refunded.

### STATE HIGHWAY DEPARTMENT.

Bids close January 12, 1932.

### Maryland Highway Work

DEPARTMENT OF PUBLIC WORKS  
STATE OF MARYLAND  
STATE ROADS COMMISSION

#### NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building one section of State Highway as follows:

St. Mary's County, Contract No. SM-87-84

—One section of State Highway along the Compton Road from the end of Contract No. SM-52 near Compton to St. Francis Xavier Church for a distance of 1.48 miles (gravel) will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Streets, Baltimore, Maryland, until 12 M. on the 12th day of January, 1932, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans, will be furnished by the Commission upon application and cash payment of \$1.00, for each separate project, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check, payable to the State Roads Commission of Maryland, as required by Sec. 6, Chapter 539, Acts of 1931, of the amount as set forth in the proposal form.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 29th day of December, 1931.

G. CLINTON UHL, Chairman.

L. H. STEUART, Secretary.

## PROPOSALS

## Manufacturers Record

Bids close January 25, 1932.

**TREASURY DEPARTMENT**, office of the supervising architect, Washington, D. C., December 24, 1931.—**SEALED BIDS**, in duplicate, subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., January 25, 1932, for furnishing all labor and materials and performing all work for the construction of the U. S. post office, etc., at Peru, Ill. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding three sets, may be obtained at this office, in the discretion of the supervising architect, by any satisfactory general contractor, and provided a deposit of \$15.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

Bids close January 13, 1932.

**TREASURY DEPARTMENT**, Office of the Supervising Architect, Washington, D. C., December 29, 1931.—**SEALED BIDS**, in duplicate, subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., January 13, 1932, for furnishing all labor and materials and performing all work for foundations for the archives building, Washington, D. C. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding three sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$15.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

Bids close January 26, 1932.

**TREASURY DEPARTMENT**, office of the supervising architect, Washington, D. C., December 28, 1931.—**SEALED BIDS**, in duplicate, subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., January 26, 1932, for furnishing all labor and materials and performing all work for the construction (except elevator) of the U. S. marine hospital at Evansville, Ind. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding three sets, may be obtained at this office, in the discretion of the supervising architect, by any satisfactory general contractor, and provided a deposit of \$15.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

# CLASSIFIED OPPORTUNITIES

## MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES

**FOR SALE:** 9500 acres prospective oil land very near oil production. Price \$2.50 per acre which is one fourth of actual value. J. C. Harrison & Co., Clarksville, Ark.

### TIMBER AND TIMBER LANDS FOR SALE

Valuable timber of a thousand acres, containing fifteen million feet, for sale at a great sacrifice. Near soil road and Coast Line Railroad.

SAMUEL HAIRSTON,  
Wenonda, Va.

### BUSINESS OPPORTUNITIES

**FULL COST PRICE** for your listed bonds in exchange for potential oil lands. This offer good for limited time to raise cash to drill for oil on our lands. Send for free booklet.

BOX 3, TRENTON, N. J.

**MANUFACTURERS**—Write for our FREE Classification Sheets of inventions for sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. ADAM FISHER MFG. CO., 578 Kenbright, St. Louis, Mo.

### STORES FOR RENT

**FOR RENT**, Macon, Ga., Heart City, Cherry St., two stores, each 13x160, or combine into one store. Long lease, reasonable rental. Murphrey, Taylor & Ellis, Macon, Ga.

### WAREHOUSE

**FOR SALE OR FOR RENT OR LEASE**  
As A Whole Or Part  
4 Acres on the King's Highway (Gesport Road), Portsmouth, Va., with Belt Line Railroad connection—800 feet private side track, large sheds and warehouse all fenced, suitable for indoor or outdoor storage.  
McEWEN LUMBER COMPANY,  
High Point, N. C.

### FACTORY SITES

**FOR RENT**—Lot containing 43,000 sq. ft. with side track, suitable for factory or oil and gas storage and distributing plant.  
**KENTUCKY & INDIANA TERMINAL**  
R. R. CO.,  
2910 High Street, Louisville, Ky.

**FOR SALE—MILL OR FACTORY SITE** Twenty-four acres in fee with twenty acres more at very low rental. Six miles from Selma, Ala., on Highway and Southern Ry. R. R. Siding, sheds, large artesian well and twenty tenant houses. Timber, cotton, other agricultural products and plenty of good labor available. The Brownlee-Lowry Co., Selma, Ala.

### RATES, TERMS AND CONDITIONS

**RATES:** 30 cents a line each insertion. Minimum space accepted, four lines. In estimating the cost allow six or seven words of ordinary length to line. When the advertisement contains a number of long words proper allowance should be made.

Rates for Special Contract:

100 lines 28c a line  
300 lines 26c a line  
500 lines or more 25c a line

**TERMS:** For transient advertising cash with order; check, post office or express money order or stamps accepted.

On special contract advertising bills are rendered monthly, covering space used each month, payable within ten days.

**CONDITIONS:** No patent medicine, oil or mining stock advertisements or questionable or undesirable advertisements will be accepted. The assistance of our readers in excluding undesirable advertisements is requested. No display type used.

### INDUSTRIAL PLANTS

ONE THREE-STORY, Brick manufacturing plant; Woodworking Machinery, ideal for Specialty or General Millwork. Rare opportunity. Located in South. Address No. 9157, care of Manufacturers Record.

### PATENT ATTORNEYS

**PATENTS**—Booklet free. Highest references. Best results. Promptness assured. WATSON E. COLEMAN, Patent Lawyer, 724 Ninth St., N. W., Washington, D. C.

**FREE "PATENT PARTICULARS"** Sterling Buck, over 25 years Registered Patent Attorney. Prompt and thorough services. Suite M 629 F, Washington, D. C.

**PAUL B. EATON**, Patent Attorney 1408-R Johnston Bldg., Charlotte, N. C. 941 Munsey Building, Washington, D. C. 417 Wachovia Bldg., Winston-Salem, N. C.

**SEYMOUR & BRIGHT**, Registered Patent Attorneys. Established 1876. PATENTS, TRADEMARKS, COPYRIGHTS. Prompt and thorough service. Suite 892, National Press Building, Washington, D. C.

### AGENCIES WANTED

**WANTED TO REPRESENT** manufacturer desiring contact with architects and the general building trade in Alabama, Mississippi, Georgia and Florida. Seventeen years engineering and sales experience. Address B, P. O. Box 2, Birmingham, Ala.

### REPRESENTATIVES WANTED

**MAN WANTED** to represent large manufacturer locally. Experience in industrial field preferred or having successfully operated own business. Earnings substantial, permanent connection. For interview write UNION PRODUCTS COMPANY, Station A, Cleveland, Ohio.

### SITUATIONS WANTED

**GRADUATE CIVIL ENGINEER**, 5 years experience on industrial construction, desires connection with good, progressive concern. Very best of references. Salary very reasonable. Address No. 9156, care of Manufacturers Record, Baltimore, Md.

**FIRE PROTECTION** Engineer Inspector, twenty years experience, seeks connection corporation having large or scattered property. College education. Knowledge all insurance rating requirements. Location anywhere. Address No. 9154, care of Manufacturers Record, Baltimore, Md.

### MEN WANTED

**IF YOU ARE OPEN** to overtures for new connection and qualified for a salary between \$2500 and \$25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service of recognized standards and reputation, through which preliminaries are negotiated confidentially for positions of the caliber indicated. The procedure is individualized to each client's personal requirements, your identity covered and present position protected. Established twenty-two years. Send only name and address for details.

R. W. BIXBY, INC.,  
103 Downtown Bldg., Buffalo, New York

### FOUNDRIES

**STEEL CASTINGS**  
Rough or Machined.  
W. W. PETTIS COMPANY,  
Cincinnati, Ohio.

### MACHINERY AND SUPPLIES

**BALDWIN LOCOMOTIVE**  
75 Ton Consolidated Type. For particulars write THE VIRGINIA & RAINY LAKE CO., Virginia, Minnesota.

**13"x8' WILLARD LATHE**, taper attachment ..... \$150.00  
46"x18' Niles-Bement-Pond Lathe, taper attachment. Quick change. 1150.00  
24"x22' Bradford Lathe, taper attachment ..... 725.00  
No. 1½ Valley City Milling Machine 300.00  
24" Queen City B. G. Crank Shaper 675.00  
22" Barnes Drill Press BG, PF ..... 115.00  
Send for catalog. Terms to suit.  
**CINCINNATI MACHINERY & SUPPLY CO.**,  
25 West 2nd St., Cincinnati, Ohio.

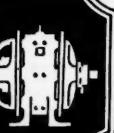
ce of the  
D. C.  
in du-  
ntained  
is office  
nning all  
(elevator)  
ansville,  
shall be  
employed  
Act of  
rawings  
ree sets,  
the dis-  
by any  
and pro-  
or each  
Checks  
payable  
United  
Accepted.  
ervising

# RESALE DEPARTMENT

MACHINERY

EQUIPMENT

SUPPLIES

**PIPE**

Rethreaded, reconditioned, guaranteed suitable for all practical purposes, furnished with new threads and couplings, 400,000 ft. in all sizes from 24" to  $\frac{3}{4}$ " diam. Very attractive prices.

**Marine Metal & Supply Co.**  
167 South Street, New York City

**PIPE OR SECOND HAND**

black or galvanized up to 12"-we have it. Cut and threaded to any length. **SPECIAL:** a carload of 3" or 4". Cheap at any time, rethreaded and coupled.

Your inquiry means—Another satisfied customer.

**HUDSON PIPE AND SUPPLY COMPANY**  
34th Street and C. R. R. of N. J. Bayonne, N. J.

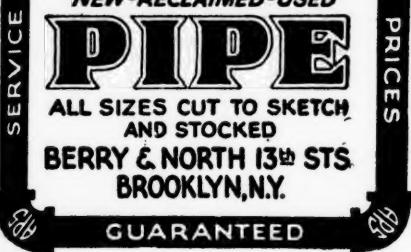
**SATISFACTION**

**ALBERT PIPE SUPPLY CO., INC.**  
NEW-RECLAIMED-USED

**PIPE**

ALL SIZES CUT TO SKETCH  
AND STOCKED  
**BERRY & NORTH 13th STS.**  
**BROOKLYN, N.Y.**

**GUARANTEED**

**IRON AND STEEL PIPE**

Large quantity new and used Government material in excellent condition, ready for immediate shipment. Low prices.

**CENTRAL PIPE & SUPPLY CO.**  
Box 1099 Charleston, W. Va.

Second Hand and New Wrought Steel **PIPE** Overhauled New Threads and Couplings  
Also Cut to Sketch

**Greenpoint Iron & Pipe Co., Inc.**  
187-205 Maspeth Ave. Brooklyn, N. Y.

**PIPE NEW  
SECOND HAND**

Overhauled and Tested  
New Threads and Couplings  
Established 1904

**Albert & Davidson  
Pipe Corp.**

Second Ave., 50th-51st Sts., Brooklyn, N. Y.  
Telephone Sunset 1900



## RAILROAD AND CONTRACTORS' EQUIPMENT

**RAILS NEW & RELAYING****ALL WEIGHTS**

Let us know your needs. We may have material in stock near you.

**WE BUY RAILS FIT TO RE-LAY**

**ROBINSON & ORR**

Columbia Bldg., 248 Fourth Ave., Pittsburgh, Pa.  
New Frogs and Switches at low prices.

**36" PORTABLE TRACK**

25 lb. rails—7 steel ties per 15 ft. sections. Over ten miles, located Ocala, Fla. Also locomotives, cars, cranes and shovels.

Write us or have your local dealer do so.  
**EQUIPMENT CORPORATION OF AMERICA**  
1166 So. Washtenaw Ave., Chicago

**FOR SALE**

**P & H MODEL 206, GAS, CRAWLER DRAGLINE 45 FT. BOOM, FULL ENCLOSED STEEL CAB,  $\frac{3}{4}$  YD. BUCKET.**  
Byers, 10 tons capacity, full revolving crawler steam crane, 40 ft. boom. 12 yd. Western, heavy duty steel beam type 2-way dump cars, 19 ft. beds; NEW BODIES.  
The above completely rebuilt and we can offer at an unusual bargain.

Have large assortment of modern locomotives 5 to 100 tons, all types, rebuilt and ready. Steam and gas shovels, etc.

**Southern Iron & Equipment Co.**  
ATLANTA GEORGIA

**STEEL SHEET PILING****NEW and USED**

Rented — Sold — Bought

Stocks at principal points.

**HYMAN-MICHAELS COMPANY**

St. Louis CHICAGO New York  
Houston San Francisco Seattle

**MONEY IN THE BANK**

Unused and unneeded Machinery and Supplies can be turned into Money in the Bank by advertising.

Use the

**RESALE DEPARTMENT**  
of the  
Manufacturers Record

*Rates on Request*

**Shovels or Cranes FOR SALE**

1—Factory rebuilt Lima 1 $\frac{1}{4}$  cu. yd. capacity. This machine can be equipped with either shovel, clamshell, dragline or drag shovel attachment. Very reasonably priced. Carries new machine guarantee. Located at Newark, N. J.

1—GENERAL  $\frac{1}{2}$ -yd. combination shovel, backhoe, 2 buckets, and crane boom. Very good condition, located Long Island.

1—GA-2 Erie Gas Air Shovel. Fine condition and bargain. Located Newark, N. J.

1—Complete Shovel Attachment for Type "O" Thew. Also, attachment for Type B and B-2 Erie located in New Jersey. Decided bargains.

1—P & H 1 $\frac{1}{4}$  yd. Gas Shovel. Excellent condition, very attractive price. Located Newark, N. J.

1—Linn Tractor, 6 yd. capacity, with Waukesha Motor. Machine in very good condition. Priced to sell quickly. Located New York State.

1—Koehring  $\frac{3}{4}$  yd. Shovel. Excellent condition throughout. Located Newark, N. J.

**LIMA EXCAVATOR SALES AGENCY**

Eastern Offices and  
Lima, O., Office: Warehouse,  
Lima Trust Bldg., 317 Frelinghuysen  
Tel. Main 4824 Ave., Newark, N. J.  
Tel. Waverly 2-0640

Wire or phone nearest office  
at our expense

## *If there were placed in your hands*

every business day in the year a list of the important work to be done in all parts of the South and Southwest, you would undoubtedly find it valuable.

To any one interested in construction work of any kind or to any one trying to sell their product to Southern industries a daily average of 200 opportunities is immediately available through a systematic use of the Daily Construction Bulletin. Sales efforts can be most effectively concentrated, for the information given in this service covers only those Southern markets which are active and buying.

Present day competition is too keen to ignore advance news of developments in your field —particularly when this news may be had at a cost of \$40.00 a year—only 13c a day.

*Try it for three months for \$10.00  
as a means of getting business.*

# DAILY CONSTRUCTION BULLETIN

*Published by  
The Manufacturers  
Record and includ-  
ed in all advertising  
contracts.*

*The quickest news  
service available  
covering industrial  
activity in the  
SOUTH.*

# WINSTON-SALEM

North Carolina

## *The Ideal Industrial City of Distribution*



**LOCATION:** approximating the center of an economic area with  
**Total annual market of *Five Billions of Dollars***  
**An annual individual buying power of *Three and a Half Billions of Dollars***  
**A population of over 10,000,000**

And within easy reach of the larger markets of the country—within a 600 mile radius **66.8% of the National Market is reached**, compared with 44.5% from New York and still less from Boston.

Manufacturers and distributors who regard as a factor of importance the distance they have to send their goods for a dollar should investigate the WINSTON-SALEM economic area.

NOTE: *Responsible business executives, seriously interested in the potentialities of WINSTON-SALEM as the ideal industrial city of distribution, may obtain substantiating data in the following booklets, which are available for distribution:*

BOOKLET I —The Southeast Market  
BOOKLET II—Distribution In the Southeast

BOOKLET III—Manufacturing Economies  
BOOKLET IV—Winston-Salem a Place to Live in

**Address INDUSTRIAL COMMISSION of WINSTON-SALEM, INC.\***  
*c/o Chamber of Commerce, Winston-Salem, N. C.*

\*The Industrial Commission is a co-operative body sponsored by the Real Estate Board; Retail Merchants Association and Chamber of Commerce.

---

## WINSTON-SALEM SOUTHBOUND RAILWAY

Offers Fast and Dependable Service for Both Carload and Less Carload Traffic. Through Package Car Service between WINSTON-SALEM and Various Important Transfer Points.

Connecting Link between the Norfolk & Western Railway and the Atlantic Coast Line Railroad, affording excellent Through Freight Train Service between the North and West and the South.

The Winston-Salem Southbound Railway traverses a fine agricultural territory, rich in raw materials, with abundance of hydro-electric power, splendid school, etc. Industrial sites available for almost any purpose.

*Full information available upon application to*

S. P. COLLIER, Traffic Manager - - - Winston-Salem, N. C.

## OPPORTUNITIES

### Industrial and Agricultural

The A. & W. P.—W. Ry. of Alabama and Georgia Railroads traverse a territory rich in material and potential resources. Attractive industrial sites. For information apply:

### Commercial and Agricultural Dev. Dept.—Above Lines Atlanta, Georgia



While cosmopolitan in its general appeal, and modern up to this moment in its equipment, there is a peculiar flavor of The Old South here which Southerners are quick to note and appreciate. They feel at home and come back to us again and again.

Rates \$3.00 per day and up. Every room with bath or shower. Centrally located.

*The Southern Hotel*  
BALTIMORE

## A FLORIDA FARM

will provide a good living for you and the family.

Of course the farmer must apply himself to the business of farming — plan intelligently — diversify his crops—raise chickens and hogs — keep a cow or two — grow fruits and other things that go with the makeup of a general farm.

It's a healthful outdoor life for all the family.

It's an occupation worth considering.

For literature—write

**MODEL LAND COMPANY**

*Flagler System*

St. Augustine, Florida



## A Change of Atmosphere for mental and physical recuperation

Of all the years recently, this is a time when business men need relaxation. Nearness to the great centers of population is one of the features that has made the sand hill country of North Carolina so popular. With dry bracing air; days abounding in sunlight, nature's great restorer and an azure sky that invites life in the open, this section possesses health-giving advantages.

Highland Pines Inn is noted for its homelike atmosphere and the comforts it provides. Two 18-hole golf courses, hunting and horseback riding through the pine woods of North Carolina are available to our guests.

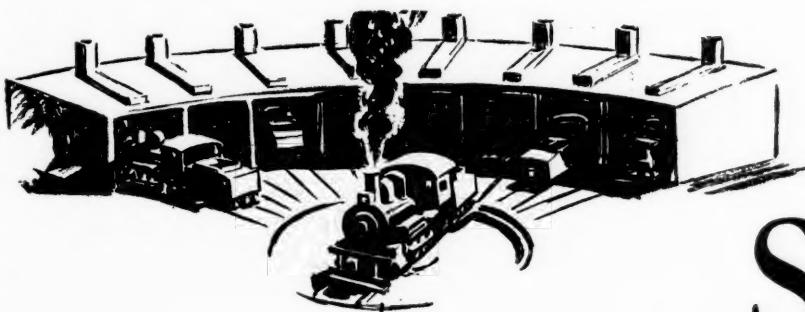
**HIGHLAND PINES INN**

CREAMER & TURNER  
Proprietors

Southern Pines, N. C.

January 7, 1932

81



# Sufficient Equipment to Handle all Shipments *Expeditorily . . .*

TERMINAL congestion is a thief. It steals profits through delay, hold-overs, higher interest charges, demurrage and customer dissatisfaction. The Port of Galveston is organized to end this needless expense to shippers.

All facilities are knit together into a solid, efficient unit for maximum shipping dispatch. Cars are brought from rail yards to wharf in an hour—one switching. Carrier

meets carrier at shipside. Specially designed trucks speed the movement of cotton in port. Commodities are handled in record time.

Centralized control at this port eliminates red tape. All shipping functions are co-ordinated—supervised by the Galveston Wharf Company, which is owned in part by the city of Galveston. Speed your goods through Galveston, a long-experienced, yet modern, port, gateway to the Southwest.

## Complete Facilities for Handling Bulk and Packaged Goods, Export, Import or Coastwise

5 trunk line railroads

69 steamship lines, serving major ports

36 modern piers

5,000,000 sq. ft. of storage area

32 waterfront warehouses

10 warehouses, concrete and steel

17 high density cotton compresses

200 fast trailer-trucks

51 miles of switch track

8 switch engines

Trackage for 10,100 cars

4 grain elevators—capacity 9,000,000 bushels

A 1,200-foot channel, 35 feet deep

A Gulf's edge harbor

11 cranes and derricks

A truck line covering all of Texas

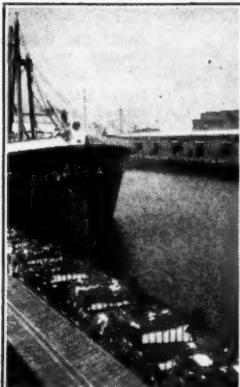
5½ miles of waterfront

5 miles of wharf pavement

A 10,000-ton dry-dock

2 ferry lines

Consider this pivotal city as a manufacturing or distributing point.



The "Shippers' Digest," semi-monthly publication giving sailing dates, is free to shippers, executives, etc. Contains port and cargo news and other useful information. Address the Chamber of Commerce or the Galveston Wharf Co., Galveston, Texas.



## Classified Index for Buyers

**ABRASIVE MATERIALS.**  
Carborundum Co., Niagara Falls, N. Y.

**ACCOUNTANTS (Cert. and Cost.)**  
Audit Company of the South, Atlanta, Ga.  
Ernst & Ernst, New York, N. Y.

**AERIAL TOWERS.**  
LeBourg, A., Gadsden, Ala.

**AIR COMPRESSORS (Stationary and Portable.)**  
Armstrong & Bro. Co., R. S., Atlanta, Ga.  
De Laval Steam Turbine Co., Trenton, N.J.  
General Electric Co., Schenectady, N. Y.  
Westinghouse Traction Brake Co., Wilmerding, Pa.

**AIR CONDITIONING SYSTEMS.**  
Niagara Blower Co., New York, N. Y.

**AIR HEATERS.**  
Babcock & Wilcox Co., New York.

**AIRLOCKS.**  
Aero Products, Inc., New York, N. Y.

**ANGLE IRON-WORKING MACHINEY.**  
Whitney Metal Tool Co., Rockford, Ill.

**APPRAISERS.**  
Mait, Inc., Chas. T., Boston, Mass.

**ARCHITECTS.**  
Chase, Wm. J. J., Atlanta.  
Main, Inc., Chas. T., Boston, Mass.  
Milburn, Heister & Co., Wash., D. C.  
Moyer Co., Tilghman, Allentown, Pa.  
Prestcher & Co., Inc., G. Lloyd, Atlanta.  
Shirley & Co., J. H., Greenville, S. C.

**ARCHITECTS' SUPPLIES.**  
Weber Co., Inc., P., Philadelphia, Pa.

**ARCHITECTURAL IRON WORK.**
**ASPHALT.**  
Gulf Refining Co., Pittsburgh, Pa.

**—Filler.**  
American Limestone Co., Knoxville, Tenn.  
—Paving.  
Barber Asphalt Co., Philadelphia, Pa.

**—Plants.**  
Simplicity System Co., Chattanooga, Tenn.

**AUDITORS.**  
Ernst & Ernst, New York, N. Y.

**BABBITT METAL.**  
Ryerson & Son, Inc., Jos. T., St. Louis and New York City.

**BACK FILLERS.**  
National Equipment Corp., (Parsons) Milwaukee, Wis.

**BALLAST (Railroad).**  
American Limestone Co., Knoxville, Tenn.

**BANKS and TRUST COMPANIES.**

Baltimore Commercial Bank, Balt., Md.  
Baltimore Trust Co., Baltimore, Md.  
Bank of New York & Trust Co., New York City.  
First and Merchants National Bank, Richmond, Va.  
Provident Savings Bank & Trust Co., Cincinnati, Ohio.

**BARGES (Steel.)**  
American Bridge Co., New York, N. Y.  
McClintic-Marshall Co., Pittsburgh, Pa.

**BARS (Steel, Rounds, Flats, Hexagon and Squares.)**  
Carnegie Steel Co., Pittsburgh, Pa.  
Gulf States Steel Co., Birmingham, Ala.  
Ingraham Iron Works Co., Birmingham.  
Ryerson & Son, Inc., Jos. T., St. Louis and New York City.  
Sweet's Steel Corp., Williamsport, Pa.  
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

**BOND BUYERS.**  
Hannett Bond Co., Inc., The, Chicago.  
Law & Co., A. M., Spartanburg, S. C.  
Youngstown Sheet & Tube Co., Youngstown, Ohio.

**BATTERIES (Storage.)**  
Electric Storage Battery Co., Phila., Pa.

**BEAMS, CHANNELS, ANGLES.**

Belmont Iron Works, Philadelphia, Pa.  
Carnegie Steel Co., Pittsburgh, Pa.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Ingraham Iron Works Co., Birmingham.  
Jones & Laughlin Steel Corp., Pittsburgh, Pa.  
Ryerson & Son, Inc., Jos. T., St. Louis and New York City.  
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.  
Virginia Bridge & Iron Co., Roanoke, Va.

**BELT (Chain.)**

Diamond Chain & Mfg. Co., Indianapolis.  
—(Leather, Canvas, Rubber.)  
Charlotte Leather Belting Co., Charlotte, N. C.  
—Dressing.  
Charlotte Leather Belting Co., Charlotte, N. C.  
—Fasteners.  
Flexible Steel Lacing Co., Chicago, Ill.

**BILLETS (Basic Open Hearth.)**

Gulf States Steel Co., Birmingham, Ala.  
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

**BINS (Steel Loading.)**  
Blaw-Knox Co., Pittsburgh, Pa.

**BLASTING POWDER and Accessories.**  
Du Pont de Nemours & Co., E. L., Wilmington, Del.

**BLINDS (Venetian and Awning.)**  
Wilson Corp., The, J. G., New York.

**BOILER REPAIRS.**  
Finnigan Co., Inc., J. J., Atlanta, Ga.

**BOILERS (New.)**

Babcock & Wilcox Co., The, New York.  
Charleston Dry Dock & Machine Co., Charleston, S. C.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Cole Mfg. Co., R. D., Newnan, Ga.  
Hedges, Walsh Weidner Co., Chattanooga, Tenn.

**BOILER SETTINGS.**

Babcock & Wilcox Co., New York.  
Brooks-Fisher Co., Atlanta, Ga.  
—Tubes.  
Babcock & Wilcox Co., New York.  
National Tube Co., Pittsburgh, Pa.  
O'Brien Machinery Co., Philadelphia, Pa.  
—Tubes (Charcoal, Iron.)  
Reading Iron Co., Reading, Pa.

**BOLTS, Rivets, Studs, Washers.**

Bethlehem Steel Co., Bethlehem, Pa.  
Oliver Iron & Steel Corp., Pittsburgh, Pa.  
Progressive Mfg. Co., Torrington, Conn.  
Russell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.

**—Tubes (Track.)**

Ryerson & Son, Inc., Jos. T., St. Louis and New York City.  
Virginia Bridge & Iron Co., Roanoke, Va.

**BOND BUYERS.**

Hannett Bond Co., Inc., The, Chicago.  
Law & Co., A. M., Spartanburg, S. C.

**Nuveen & Co., John, Chicago, Ill.**  
Provident Savings Bank and Trust Co., Cincinnati, Ohio.

**BORINGS (Core.)**

Kennedy-Rieger Drilling Co., New York City.  
Mott Core Drilling Co., Huntington, W. Va.  
Pennsylvania Drilling Co., Pittsburgh, Pa.  
Southern Drilling Co., Salville, Va.  
Sprague & Henwood, Inc., Scranton, Pa.

**BOXES (Paper.)**

Old Dominion Box Co., Lynchburg, Va.

**BRASS GOODS.**

Muller Co., Deatur, Ill.

**BRICK (Common Building.)**

Friend & Co., Inc., Petersburg, Va.

**—(Vitrified, Paving.)**

National Paving Brick Assn., Washington, D. C.

**—and Clayworking Machy.**

Stiles & Sons, J. C., Statesville, N. C.

**BRIDGE (Operating Machinery.)**

Erie Gear & Machine Co., Phila., Pa.

**—Slabs.**

Kenlow Steel Flooring Co., Jersey City, N. J.

**—Stringers, Timber (Creosoted.)**

American Creosote Wks., New Orleans, La.  
American Creosoting Co., Louisville, Ky.

Atlantic Creosoting Co., Norfolk, Va.  
Ayer & Lord Tie Co., Chicago, Ill.

**BRIDGES (Steel.)**

American Bridge Co., New York, N. Y.  
Belmont Iron Works, Philadelphia, Pa.  
Bristol Steel & Iron Works, Inc., Bristol, Va.

Converse Bridge & Steel Co., Chattanooga, Tenn.

Ingraham Iron Works Co., Birmingham, Ala.  
McClintic-Marshall Co., Pittsburgh, Pa.  
Roanoke Iron & Bridge Works, Roanoke, Va.  
Virginia Bridge & Iron Co., Roanoke, Va.

**BRONZE (Architectural.)**

Cincinnati Mfg. Co., Cincinnati, O.  
Heath Company, J. H., Worthington, O.

**BUBBLERS.**

Bundle-Spence Mfg. Co., Milwaukee, Wis.

**BUCKETS (Clam Shell.)**

Blaw-Knox Co., Pittsburgh, Pa.  
Owen Bucket Co., The, Cleveland, Ohio.  
Wellman Engr. Co., Cleveland, O.

**—(Coal.)**

Owen Bucket Co., Cleveland, O.

**—(Dredging, Excavating, Sewer, etc.)**

Owen Bucket Co., The, Cleveland, Ohio.  
Stearns Iron Works, G. L., Long Island City, N. Y.  
Wellman Engr. Co., Cleveland, O.

**—(Elevator.)**

Hendrick Mfg. Co., Carbendale, Pa.

**—(Material Handling.)**

Owen Bucket Co., Cleveland, O.

**—(Ore Handling.)**

Owen Bucket Co., The, Cleveland, Ohio.  
Stearns Iron Works, G. L., Long Island City, N. Y.

**—(Rehandling.)**

Owen Bucket Co., Cleveland, O.

**—(Sand and Gravel.)**

Owen Bucket Co., Cleveland, O.  
Wellman Engr. Co., Cleveland, O.

**BUILDERS and Contractors.**

Cowper Co., Inc., John W., Washington, D. C.  
Lockwood Greene Engrs., Inc., Boston.  
Moyer Co., Tilghman, Allentown, Pa.  
White Engineering Co., I. G., New York.

**BUILDING GRANITE (Finished.)**

North Carolina Granite Corp., The, Mount Airy, N. C.

**BUILDINGS (Industrial.)**

Belmont Iron Works, Philadelphia, Pa.  
Blaw-Knox Co., Pittsburgh, Pa.  
Ingraham Iron Works Co., Birmingham.  
McClintic-Marshall Co., Pittsburgh, Pa.  
Virginia Bridge & Iron Co., Roanoke, Va.

**—(Portable Sheet Metal.)**  
Birmingham Tank Co., Birmingham.

**BULKHEADS.**

Shore-Line Builders, Inc., Jacksonville, Fla.  
Spar Corp., Frederick, New York, N. Y.

**BULLDOZERS.**

Trackson Co., Milwaukee, Wis.

**BURLAP.**

Fults Bag & Cotton Mills, Atlanta, Ga.

**BUSINESS METHODS.**

Ernst & Ernst, New York, N. Y.

**CABLE (Elevator.)**

American Steel & Wire Co., Chicago, Ill.  
Boehling's Sons Co., John A., Trenton, N. J.  
Western Electric Co., New York City.

**CALCIUM CHLORIDE.**

Grasselli Chemical Co., Inc., Birmingham.

**CAN and Box-Making Machinery (Tin.)**

Bliss Co., E. W., Brooklyn, N. Y.

**CANNING MACHINERY.**

Robins & Co., A. K., Baltimore, Md.

**CANVAS.**

Fults Bag & Cotton Mills, Atlanta, Ga.

**CARS (Dump, Industrial, Logging and Mine.)**

Southern Iron & Equipment Co., Atlanta.

**CASSIONS (Foundations, Water Wells, etc.)**

United Welding Co., Middletown, O.

**CASTINGS (Alloy.)**

Cincinnati Steel Castings Co., Cincinnati, O.  
Mountain State Steel Foundries, Parkersburg, W. Va.

**—(Brass, Bronze and Aluminum.)**

Richmond Foundry & Mfg. Co., Richmond, Va.

**—(Chilled Iron.)**

Fuller Lehigh Co., Fullerton, Penna.

**—(Gray Iron.)**

Fuller Lehigh Co., Fullerton, Penna.  
Glasgow Pipe & Fdy. Co., Lynchburg, Va.

**Jefferson Foundry Co., Birmingham, Ala.  
Richmond Foundry & Mfg. Co., Richmond, Va.**

Salem Fdy. & Mfg. Wks., Salem, Va.  
Schedler's Sons Co., J. S., Macon, Ga.  
U. S. Pipe & Foundry Co., Burlington, N. J.

**—(Semi-Steel.)**

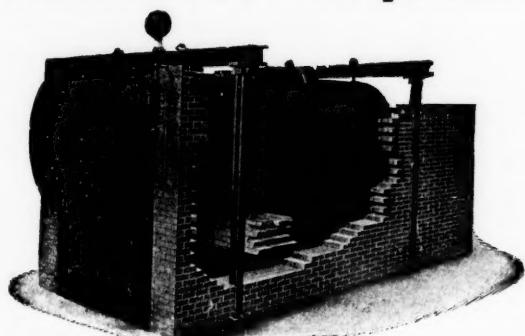
Jefferson Foundry Co., Birmingham, Ala.  
Salem Fdy. & Mfg. Wks., Salem, Va.

**—(Steel.)**

Bethlehem Steel Co., Bethlehem, Pa.  
Cincinnati Steel Castings Co., Cincinnati, O.  
Crusible Steel Casting Co., Lansdowne, Delaware Co., Pa.

Lankensheimer Co., Cincinnati, Ohio.  
Mountain State Steel Foundries, Parkersburg, W. Va.

## BOILERS for immediate shipment



We carry in stock for immediate shipment sizes from 12 to 150 h.p. Working pressure of either 100-124 or 150 pounds.

Schofield Boilers are Built of Open Hearth Homogeneous Flange and Fire Box Steel Plate with a tensile strength of 55,000 lbs. of pressure per square inch of section.

All boilers tested to pressure of 50% in excess of requirement.

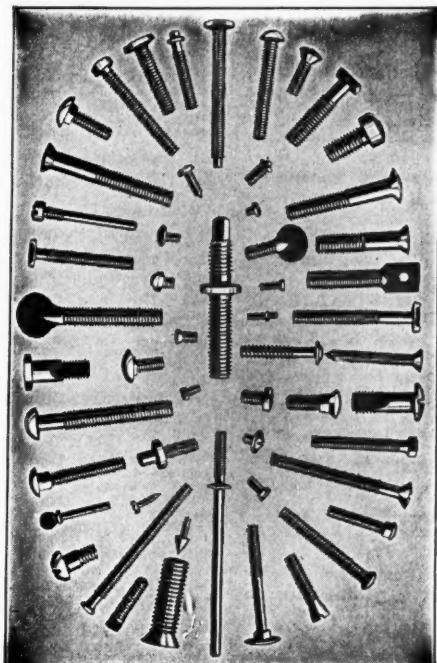
*We also manufacture*

PUMPS, ACID TANKS, DREDGE PIPE, INCINERATORS, ROTARY DRYERS, STEEL BUILDINGS, STEEL PLATE WORK, MUNICIPAL CASTINGS, GREY IRON CASTINGS, ENGINES, STEEL STORAGE TANKS, SEED AND GRAIN TANKS, ELEVATED WATER TANKS



J. S. Schofield's Sons  
Co., Inc.

Macon, Georgia, U. S. A.



### MACHINE SCREWS SQUARE AND HEXAGON NUTS

Specialists in upset work.  
Write for prices, if special submit samples  
advising as to quantity required.

THE PROGRESSIVE MANUFACTURING CO.  
TORRINGTON, CONN.

## KROMOTAN LEATHER BELTING

Highest Pulley Adhesion

For High Speeds  
High Pulley Ratios  
Idlers or Tightners

CHARLOTTE LEATHER BELTING CO.

Plant: CHARLOTTE, N. C.



### CLEAN, PRECISE CASTINGS

Complete Foundry Service  
for  
Quantity Production  
Brass, Bronze, Iron, Aluminum,  
Nickel, Silver.

Contract Work on Small Machines and Devices

THE RICHMOND  
FOUNDRY & MANUFACTURING CO. INC.

RICHMOND, VIRGINIA.

"A Dependable Source of Supply"

Refractory Brickwork  
Small Incinerators Insulation  
Furnace Linings  
Boiler Settings

The BROOKS-FISHER CO.  
Atlanta Dallas

## CHARLESTON DRY DOCK & MACHINE CO.

CHARLESTON, S. C.  
Builders of All Welded Ships  
MARINE AND STATIONARY BOILERS  
Repairs to Steel and Wooden Vessels  
1,500 and 600-ton Marine Railways

### HIGH GRADE GRAY IRON & SEMI-STEEL CASTINGS

From one pound to ten thousand pounds.  
Careful attention to detail.  
Your requirements solicited, quick service.

JEFFERSON FOUNDRY COMPANY  
Birmingham, Alabama

P. O. Box 147 Phone 9.4850

### ELECTRIC STEEL CASTINGS

Weighing from 1 lb. to 500 lbs. each  
Quantity Production A Specialty  
Nickel, Chrome and Other Alloy  
Quick Delivery Inquiries Solicited  
CRUCIBLE STEEL CASTING COMPANY  
LANSDOWNE, DELAWARE COUNTY, PA.

## CLASSIFIED INDEX FOR BUYERS

Manufacturers Record

**CEMENT (Portland.)**  
Alpha Portland Cement Corp., Birmingham, Ala.

**CHAINS (High Speed Roller.)**  
Diamond Chain & Mfg. Co., Indianapolis.

**—(Silent Drive.)**  
Diamond Chain & Mfg. Co., Indianapolis.

**CHAIRS (Opera and Theatre.)**  
Andrews Co., A. H. Chicago, Ill.

**CHEMICALS.**  
Grasselli Chemical Co., Inc., Birmingham.

**CHEMISTS, CHEMICAL ENGINEERS (Analytical.)**  
Froehling & Robertson, Inc., Richmond, Va.

Hunt Co., Robert W., Chicago, Ill.  
Longdale Laboratories, Inc., Richmond, Va.  
Meigs, Bassett & Slaughter, Phila., Pa.  
Picard Laboratories, Birmingham, Ala.  
Pittsburgh Testing Laboratories, Pittsburgh, Pa.  
Southwestern Laboratories, Fort Worth, Tex.  
Stillman & Van Sielen, New York.

**—(Consulting, Paper Industry.)**  
Froehling & Robertson, Inc., Richmond, Va.

**CHIMNEYS (Concrete.)**  
Rust Engineering Co., Birmingham, Ala.

**—(Radial Brick.)**  
Rust Engineering Co., Birmingham, Ala.

**CHLORIDE ACCUMULATOR.**  
Electric Storage Battery Co., Phila., Pa.

**CHUTES (Mail.)**  
Cutler Mail Chute Co., Rochester, N. Y.

**CLUTCHES (Friction.)**  
Caldwell Co., Inc., W. E., Louisville, Ky.

**COAL (Bituminous.)**  
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

**—(and Ash-Handling Machy.)**  
Northwest Engineering Co., Chicago  
Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—Jigs.**  
Steward Machine Co., Chas. C., Birmingham, Ala.

**—Tipples.**  
American Bridge Co., New York, N. Y.  
Virginia Bridge & Iron Co., Roanoke, Va.

**—Washers.**  
Steward Machine Co., Chas. C., Birmingham, Ala.

**COCKS (Service.)**  
Merle Nordstrom Valve Co., San Francisco, Calif.

**COKE.**  
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

**COLUMNS (Cast Iron.)**  
U. S. Pipe & Foundry Co., Burlington, N.J.

**CONCRETE Construction (Reinforced.)**  
Cement Gun Construction Co., Chicago.  
Rust Engineering Co., Birmingham, Ala.

**—Mixers.**  
Dunning & Bechert Press Co., Inc., Syracuse, N. Y.

**CONDENSERS.**  
Manistee Iron Works Co., Manistee, Mich.

**CONDUITS (Electric, Interior, Steel.)**  
Western Electric Co., New York, N. Y.  
Youngstown Sheet & Tube Co., Youngstown, Ohio.

**CONTRACTORS (Bridge.)**  
Hardaway Contracting Co., Columbus, Ga.  
Kansas City Bridge Co., Kansas City, Mo.  
Snare Corp., Frederick, New York.

**—(Drainage and Dredging.)**  
Arundel Corp., The, Baltimore, Md.  
Atlantic Gulf and Pacific Co., New York.

**—Drilling.**  
Kennedy-Rieger Drilling Co., New York City.  
Matt Core Drilling Co., Huntington, W. Va.

**PENNSYLVANIA DRILLING CO., PITTSBURGH, PA.**  
Southern Drilling Co., Saltville, Va.  
Sprague & Howland, Inc., Scranton, Pa.

**—(Electrical.)**

Virginia Engineering Co., Inc., Newport News, Va.

Walker Electrical Co., Atlanta, Ga.  
Warner Service Co., Knoxville, Tenn.  
Webb Electric Co., Anderson, S. C.

**—(Foundations and Dams.)**  
Snare Corp., Frederick, New York, N. Y.

**—(General.)**

Blair, Algernon, Montgomery, Ala.  
Burke, Inc., J. V. & E. T., New Orleans.  
Cornell Young Co., Inc., Macon, Ga.  
Cowper Co., Inc., John W., Washington, D. C.

Fiske-Carter Constr. Co., Greenville, S. C.  
Smallman-MacQueen Construction Co., Birmingham.

Snare Corp., Frederick, New York, N. Y.

White Engineering Corp., J. G., New York.

**—(Industrial Buildings.)**

Blair, Algernon, Montgomery, Ala.  
Cowper Co., Inc., John W., Washington, D. C.

Fiske-Carter Constr. Co., Greenville, S. C.  
Lockwood Greene Engrs., Inc., Boston.  
Smallman-MacQueen Construction Co., Birmingham.

Snare Corp., Frederick, New York, N. Y.

White Engineering Corp., J. G., New York.

**—(Locomotive.)**

Bucyrus-Erie Co., So., Milwaukee, Wis.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

**—(Material Handling.)**

Bay City Shovels, Inc., Bay City, Mich.

Industrial Brownhoist Corp., Cleveland, O.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

Universal Crane Co., Lorain, Ohio.

**—(Power Piping.)**

Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.

Poe Piping & Heating Co., Greenville, S. C.

Power Piping Co., Pittsburgh, Pa.

**—(Power Plants.)**

Snare Corp., Frederick, New York, N. Y.

Virginia Engineering Co., Inc., Newport News, Va.

**—(Railroad.)**

Cornell Young Co., Inc., Macon, Ga.

**—(Reinforced Concrete.)**

Blair, Algernon, Montgomery, Ala.

Cement Gun Construction Co., Chicago.

Gumite Cone & Constr. Co., Kansas City.

White Co., Arthur J., Pittsburgh, Pa.

**—(Road and Street Paving.)**

Fiske-Carter Constr. Co., Greenville, S. C.

Hornbuckle Contracting Co., Atlanta, Ga.

McCrory Co., J. B., Atlanta, Ga.

Virginia Engineering Co., Inc., Newport News, Va.

**—(Sewerage and Waterworks.)**

Hardaway Contracting Co., Columbus, Ga.

Hornbuckle Contracting Co., Atlanta, Ga.

McCrory Co., J. B., Atlanta, Ga.

Virginia Engineering Co., Inc., New York.

**—(Sprinkler System.)**

Poe Piping & Heating Co., Greenville, S. C.

**—Machinery and Supplies (Used.)**

Lima Excavator Sales Agency, Lima, Ohio.

Machinery Record, Richmond, Va.

Marine Metal & Supply Co., New York.

**—(Contract Work Wanted.)**

(See following classifications:)

Castings.

Foundries and Machine Shops.

Machinery (Special).

Ornamental Iron Work.

Patterns.

Sheet Metal Work.

Structural Steel and Iron.

**—(Conveying and Elevating Machinery.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

Universal Crusher Co., Cedar Rapids, Ia.

**—(Cooling and Heating Units (Fan.)**

Niagara Blower Co., New York, N. Y.

**—(Cylinders (Compressed Air, Gas.)**

National Tube Co., Pittsburgh, Pa.

**—(Crane.)**

Abe Products, Inc., New York, N. Y.

**—(Desks (School.)**

Andrews Co., A. H., Chicago, Ill.

**—(Ditching Machinery.)**

Bay City Shovels, Inc., Bay City, Mich.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

**—(Doors (Cabinet Woodwork.)**

Mitchell Mfg. Co., Robert, Cincinnati, O.

**—(Electric Traveling.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Fireproof, Air Chamber.)**

Wilson Corp., The J. G., New York.

**—(Galanzein and Hollow Metal.)**

Cincinnati Mfg. Co., Cincinnati, O.

**—(Hollow Metal.)**

Wilson Corp., The J. G., New York.

**—(Industrial Buildings.)**

Blair, Algernon, Montgomery, Ala.

Burke, Inc., J. V. & E. T., New Orleans.

Cornell Young Co., Inc., Macon, Ga.

Cowper Co., Inc., John W., Washington, D. C.

Fiske-Carter Constr. Co., Greenville, S. C.

Smallman-MacQueen Construction Co., Birmingham.

Snare Corp., Frederick, New York, N. Y.

White Engineering Corp., J. G., New York.

**—(Locomotive.)**

Bucyrus-Erie Co., So., Milwaukee, Wis.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

**—(Mail Boxes.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Material Handling.)**

Bay City Shovels, Inc., Bay City, Mich.

Industrial Brownhoist Corp., Cleveland, O.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio.

**—(Mobile Shovel.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motor Boats.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motor Cars.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motor Trucks.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motor Vehicles.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motor Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

Shepard Niles Crane & Hoist Corp., Mon-tour Falls, N. Y.

**—(Motorized Wagons.)**

</div

January 7, 1932

## CLASSIFIED INDEX FOR BUYERS

85

**ELECTRIC LIGHTING.**  
Westinghouse Lamp Co., New York City.**ELECTRIC SHOVELS (See  
Shovels.)****ELEVATORS (Electric.)**  
American Elevator & Machine Co., Inc.,  
Louisville, Ky.  
Millner Co., St. Louis, Mo.**(Hand and Belt Power.)**  
American Elevator & Machine Co., Inc.,  
Louisville, Ky.  
Millner Co., St. Louis, Mo.**(Hydraulic.)**  
American Elevator & Machine Co., Inc.,  
Louisville, Ky.**ENGINEERS (Airports.)**  
Lockwood Greene Engrs., Inc., New York  
MacElwee & Crandall, Inc., Cambridge,  
Mass.**(Appraisal.)**  
Lockwood Greene Engrs., Inc., New York  
Main, Inc., Chas. T., Boston, Mass.  
Wadleigh & Bailey, Washington, D. C.  
White Engineering Corp., J. G., New  
York.Whitman, Requardt & Smith, Balt., Md.  
Wiedeman & Singleton, Inc., Atlanta.**(Bridge.)**  
Gardner & Howe, Memphis, Tenn.  
Greiner & Co., J. E., Baltimore, Md.  
Hardaway Contracting Co., Columbus, Ga.  
Hedrick, Inc., Ira G., Hot Springs, Nat'l  
Park, Ark.  
Steel & Lohy, Knoxville, Tenn.  
Virginia Bridge & Iron Co., Roanoke, Va.  
Whitman, Requardt & Smith, Balt., Md.  
Wiley & Wilson, Lynchburg, Va.**(Chemical.)**  
Dow & Smith, New York, N. Y.  
Moss, Jr., W. Wade, Columbus, Ga.  
Picard Laboratories, Birmingham, Ala.  
Pittsburgh Testing Laboratories, Pitts-  
burgh, Pa.**(Civil.)**  
Gardner & Howe, Memphis, Tenn.  
Greiner & Co., J. E., Baltimore, Md.  
Harrub Engr. Co., C. N., Nashville, Tenn.  
Hedrick, Inc., Ira G., Hot Springs, Nat'l  
Park, Ark.  
Hills and Youngberg, Jacksonville, Fla.  
Huey, S. E., Monroe, La.  
MacElwee & Crandall, Inc., Cambridge,  
Mass.  
Main, Inc., Chas. T., Boston, Mass.  
Spring, Chas. Herbert, Greensboro, N. C.  
Steel & Lohy, Knoxville, Tenn.  
White Engineering Corp., J. G., New  
York.Whitman, Requardt & Smith, Balt., Md.  
Wiley & Wilson, Lynchburg, Va.**(Consulting.)**  
Barstow & Co., W. S., New York City.  
Converse & Co., J. B., Mobile, Ala.  
Cramer, Robert, Milwaukee, Wis.  
Engineering Service Corp., Houston, Tex.  
Goder, Joseph, Chicago, Ill.  
Hedrick, Inc., Ira G., Hot Springs, Nat'l  
Park, Ark.  
Lockwood Greene Engrs., Inc., New York  
Main, Inc., Chas. T., Boston, Mass.  
Smith, Eloy G., Augusta, Ga.  
Stillman & Van Sickle, New York, N. Y.  
Wadleigh & Bailey, Washington, D. C.  
White Engineering Corp., J. G., New York.  
Whitman, Requardt & Smith, Balt., Md.  
Wiedeman & Singleton, Inc., Atlanta, Ga.  
Wiley & Wilson, Lynchburg, Va.**(Cost.)**  
Ernst & Ernst, New York, N. Y.**(Dams.)**  
Alpaugh & Sons, Chas. W., Manassas, Va.  
Barstow & Co., W. S., New York City.  
Bylesby Engineering and Management  
Corp., Chicago, Ill.  
Gardner & Howe, Memphis, Tenn.  
Hardaway Contracting Co., Columbus, Ga.  
Hedrick, Inc., Ira G., Hot Springs, Nat'l  
Park, Ark.  
Lee Engineering Corp., William S., Char-  
lotte, N. C.  
Main, Inc., Chas. T., Boston, Mass.  
Shirine & Co., J. E., Greenville, S. C.  
White Engineering Corp., J. G., New  
York.  
Wiley & Wilson, Lynchburg, Va.**(Drainage and Irrigation.)**  
Cramer, Robert, Milwaukee, Wis.  
Federal Farm Equipment Co., Jackson-  
ville, Fla.  
Hills and Youngberg, Jacksonville, Fla.  
Huey, S. E., Monroe, La.**(Efficiency.)**  
Ernst & Ernst, New York, N. Y.  
Whitman, Requardt & Smith, Balt., Md.**(Electrical.)**  
Engineering Service Corp., Houston, Tex.  
Hedrick Engineering Co., Chicago, Ill.  
Lee Engineering Corp., William S., Char-  
lotte, N. C.  
Lockwood Greene Engrs., Inc., New York  
Main, Inc., Chas. T., Boston, Mass.  
Webb Electric Co., Anderson, S. C.  
Wiley & Wilson, Lynchburg, Va.**(Electric-Light and Power  
Plants.)**Barstow & Co., W. S., New York City.  
Bylesby Engineering and Management  
Corp., Chicago, Ill.  
Cramer, Robert, Milwaukee, Wis.  
Hall, J. Henry, Lexington, Ky.  
Lee Engineering Corp., William S., Char-  
lotte, N. C.  
Main, Inc., Chas. T., Boston, Mass.  
White Engineering Corp., J. G., New York  
Wiley & Wilson, Lynchburg, Va.**(Gas.)**  
Bylesby Engineering and Management  
Corp., Chicago, Ill.  
Huey, S. E., Monroe, La.**(Geological.)**  
Froehling & Robertson, Richmond, Va.  
Moss, Jr., W. Wade, Columbus, Ga.  
Wadleigh & Bailey, Washington, D. C.**(Harbor Improvements.)**  
Engineering Service Corp., Houston, Tex.**(Heating.)**  
Wiley & Wilson, Lynchburg, Va.**(Hydraulic.)**  
Alpaugh & Sons, Chas. W., Manassas, Va.  
Main, Inc., Chas. T., Boston, Mass.  
Whitman, Requardt & Smith, Balt., Md.  
Wiley & Wilson, Lynchburg, Va.**(Hydro-electric.)**  
Alpaugh & Sons, Chas. W., Manassas, Va.  
Barstow & Co., W. S., New York City.  
Bylesby Engineering and Management  
Corp., Chicago, Ill.  
Hall, J. Henry, Lexington, Ky.  
Lee Engineering Corp., William S., Char-  
lotte, N. C.  
Main, Inc., Chas. T., Boston, Mass.  
Shirine & Co., J. E., Greenville, S. C.  
White Engineering Corp., J. G., New York  
Whitman, Requardt & Smith, Balt., Md.  
Wiley & Wilson, Lynchburg, Va.**(Ice and Refrigerating.)**  
Engineering Service Corp., Houston, Tex.**(Industrial Plants.)**  
Barstow & Co., W. S., New York City  
Conover, Older & Quinlan, Inc., Chicago  
Converse & Co., J. B., Mobile, Ala.  
Gardner & Howe, Memphis, Tenn.  
Greiner & Co., J. E., Baltimore, Md.  
Hall, J. Henry, Lexington, Ky.  
Hills and Youngberg, Jacksonville, Fla.  
Lockwood Greene Engrs., Inc., New York  
MacElwee & Crandall, Inc., Cambridge,  
Mass.  
Main, Inc., Chas. T., Boston, Mass.  
Preacher & Co., Inc., G. Lloyd, Atlanta  
Shirine & Co., J. E., Greenville, S. C.  
Smith, Eloy G., Augusta, Ga.  
Wiley & Wilson, Lynchburg, Va.**(Industrial Survey.)**  
Converse & Co., J. B., Mobile, Ala.  
Lockwood Greene Engrs., Inc., New York  
Wadleigh & Bailey, Washington, D. C.**(Inspection and Tests.)**  
Cramer, Robert, Milwaukee, Wis.  
Dow & Smith, New York, N. Y.  
Froehling & Robertson, Inc., Richmond,  
Va.Hunt Co., Robert W., Chicago, Ill.  
McCallum Inspection Co., Norfolk, Va.  
Moss, Jr., W. Wade, Columbus, Ga.  
Picard Laboratories, Birmingham, Ala.  
Pittsburgh Testing Laboratories, Pitts-  
burgh, Pa.

Southwestern Laboratories, Ft. Worth, Tex.

**(Lighting.)**  
Bylesby Engineering & Management  
Corp., Chicago, Ill.  
Westinghouse Lamp Co., New York City.  
Wiley & Wilson, Lynchburg, Va.**(Mechanical.)**  
Engineering Service Corp., Houston, Tex.  
Lee Engineering Corp., William S., Char-  
lotte, N. C.  
Lockwood Greene Engrs., Inc., New York  
Main, Inc., Chas. T., Boston, Mass.  
Meigs, Bassett & Slaughter, Phila., Pa.  
Wiley & Wilson, Lynchburg, Va.**(Mining. See Engineers, Ge-  
ological.)****(Municipal.)**  
Conover, Older & Quinlan, Inc., Chicago  
Dow & Smith, New York, N. Y.  
Harrub Engr. Co., C. N., Nashville, Tenn.  
Hills and Youngberg, Jacksonville, Fla.  
Huey, S. E., Monroe, La.**(Paving and Roads.)**  
Dow & Smith, New York, N. Y.  
Harrub Engr. Co., C. N., Nashville, Tenn.**(Printing and Newspaper  
Plants.)**

Lockwood Greene Engrs., Inc., New York

**(Public Service Properties.)**  
Barstow & Co., W. S., New York City.  
Bylesby Engineering & Management  
Corp., Chicago, Ill.

## WILSON ROLLING STEEL DOORS *for every purpose*

Time tested for more than half a century Wilson Rolling Steel Doors are perfect protection and operate speedily. They allow every inch of floor space to be used. Flexible in design. A type for every purpose. Hand, chain gear or motor operation.

*Write for Catalog No. 8-S*

**The J. G. Wilson Corporation**

11 East 38th St., New York

Box 1194, Norfolk, Va.

Offices in All Principal Cities

MORE THAN 50 YEARS IN BUSINESS



## EARLE

Cut Spur, Bevel, Herringbone,  
and Worm Gears

The Earle Gear & Machine Co.

4719 Stanton Avenue,

Philadelphia, Pa.

110 State St., Boston, Mass.

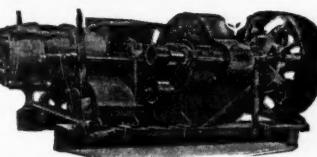
95 Liberty St., New York City

## GEARS

### CLAY WORKING MACHINERY

For Brick, Tile and Block,  
from smallest to largest  
capacity.

Write for catalogue.  
Full line equipment.



J. C. STEELE & SONS

Statesville, N. C., U.S.A.

### BRICK—CHIMNEYS—CONCRETE

### BOILER BRICKWORK

### The Rust Engineering Co.

Engineers and Contractors

BIRMINGHAM, ALABAMA

PITTSBURGH—WASHINGTON—NEW YORK—CHICAGO

### AMERICAN ELEVATORS

PASSENGER AND FREIGHT

AMERICAN

ELEVATOR and MACHINE CO., INC.

Established in 1898

LOUISVILLE, KENTUCKY



Allows air and light to penetrate—can be had in any lengths and gage—does not have to be made in sections. Easily and firmly installed. Has all the advantages of all other gratings PLUS the exclusive non-skid feature and it costs less.

Send for a sample.

**CENTRAL IRON & STEEL CO.**

HARRISBURG, PENNA.

Branches in all Principal Cities

SPECIFY

**KERLOW**

*Square and Triangular Mesh  
FLOOR GRATINGS AND STAIR STEPS  
The strongest and lightest  
BRIDGE AND FLOOR SLABS (Monolithic)  
Catalogue and Prices on request  
KERLOW STEEL FLOORING COMPANY  
STEEL 222-228 Culver Ave., Jersey City, N.J.  
See Telephone book for representations*

## WATER FILTERS

Pressure and Gravity type for Municipal Water Supplies, Rayon Manufacturing Plants, Textile Finishing Establishments, Raw Water Ice Plants, Laundries, Etc.

**ROBERTS FILTER MANUFACTURING COMPANY**  
604 Columbia Avenue Darby, Pennsylvania

## Water Purification Plants

*Any Type—Any Purpose—Any Capacity*

Dry Chemical Feed Machines  
Swimming Pool Filters

**E. W. BACHARACH & CO.**  
Rialto Bldg. Kansas City, Mo.



## Water Purification Equipment

Water Softeners and Filters—Of Every Type and Size  
Taste—Odor—Chlorine—Color—Iron Removal Plants  
Wet and Dry Chemical Feeders—Proportioning Devices  
Rate of Flow Controllers—Gauges—Venturi Meters

INTERNATIONAL FILTER CO. 59 EAST VAN BUREN STREET CHICAGO

Hall, J. Henry, Lexington, Ky.  
Main, Inc., Chas. T., Boston, Mass.  
White Engineering Corp., J. G., Ntw  
York.

—(Railroad.)  
Hoey, S. E., Monroe, La.

—(Reinforced Concrete Bridges,  
Buildings, etc.)  
Gardner & Howe, Memphis, Tenn.  
Greiner & Co., J. E., Baltimore, Md.  
Lockwood Greene Engrs., Inc., New York.  
Main, Inc., Chas. T., Boston, Mass.  
Steel & Luby, Knoxville, Tenn.

—(Sanitary.)  
Cramer, Robert, Milwaukee, Wis.  
Whitman, Regardt & Smith, Balt., Md.  
Wiley & Wilson, Lynchburg, Va.

—(Sewage Disposal Plants.)  
Cramer, Robert, Milwaukee, Wis.  
McCrory Co., The, J. B., Atlanta, Ga.  
Whitman, Regardt & Smith, Balt., Md.  
Wiedeman and Singleton, Inc., Atlanta.  
Wiley & Wilson, Lynchburg, Va.

—(Sewerage and Waterworks.)  
Conover, Olden & Quinlan, Inc., Chicago.  
Hall, J. Henry, Lexington, Ky.  
Hardaway Contracting Co., Columbus, Ga.  
Harvey Eng'r. Co., C. M., Nashville, Tenn.  
Hills and Youngberg, Jacksonville, Fla.  
White Co., Gilbert C., Durham, N. C.  
Whitman, Regardt & Smith, Balt., Md.  
Wiedeman & Singleton, Inc., Atlanta, Ga.  
Wiley & Wilson, Lynchburg, Va.

—(Structural.)  
Herrick, Inc., Ira G., Hot Springs Nat'l.  
Park, Ark.  
Hills and Youngberg, Jacksonville, Fla.  
Hoey, S. E., Monroe, La.  
Lockwood Greene Engrs., Inc., New York.  
Virginia Bridge & Iron Co., Roanoke, Va.  
Whitman, Regardt & Smith, Balt., Md.

—(Textile Mills.)  
Lockwood Greene, Engrs., Inc., New York.  
Main, Inc., Chas. T., Boston, Mass.  
Surrine & Co., J. M., Greenville, S. C.

—(Transmission Lines.)  
Hoessle Engineering Co., Chicago, Ill.

—(Ventilating and Heating.)  
Wiley & Wilson, Lynchburg, Va.

—(Water Supply.)  
Whitman, Regardt & Smith, Balt., Md.  
Wiley & Wilson, Lynchburg, Va.

ENGINES (Compressed Air.)  
Dake Engine Co., Grand Haven, Mich.

—(Diesel Type.)  
Fairbanks, Morse & Co., Chicago, Ill.  
Superior Engine Co., Springfield, O.

—(Gas and Gasoline.)  
Sterling Engine Co., Buffalo, N. Y.

—(Marine.)  
Fairbanks, Morse & Co., Chicago, Ill.

—(OIL.)  
Continental Gin Co., Birmingham, Ala.

—(Steam.)  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Lombard Iron Works & Supply Co., Augusta, Ga.  
Schoell's Sons Co., J. S., Macon, Ga.

ENVELOPES.  
Young & Selden Co., Baltimore, Md.

ESTIMATORS (Building & Construction.)  
Martin, Joe B., Charlotte, N. C.  
Spring, Chas. Herbert, Greensboro, N. C.

EXCAVATING MACHINERY.  
Bay City Shovels, Inc., Bay City, Mich.  
Bucyrus-Erie Co., So. Milwaukee, Wis.  
National Equipment Corp., (Koehring, Parsons) Milwaukee, Wisconsin.  
Northwest Engineering Co., Chicago, Ill.  
Owen Buck Co., The, Cleveland, Ohio.

EXCAVATORS (Clamshell and  
Orange Peel.)  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

—(Dragline. See Dragline Ex-  
cavators.)

—(Trench.)  
Bay City Shovels, Inc., Bay City, Mich.  
Bucyrus-Erie Co., So. Milwaukee, Wis.  
Ohio Power Shovel Co., Lima, Ohio.

EXPANSION JOINTS (Road and  
Street.)  
Carey Co., Philip, Leckland, Cincinnati,  
Ohio.

EXPLOSIVES.  
Du Pont de Nemours & Co., Inc., R. I.  
Wilmington, Del.

FACTORY Management Systems.  
Ernst & Ernst, New York, N. Y.

FED-WATER HEATERS and  
Purifiers.  
American Water Softener Co., Phila., Pa.  
International Filter Co., Chicago, Ill.

FENCING, ENTRANCE GATES  
(Iron, Steel and Wire.)  
American Steel and Wire Co., Balt., Md.  
Cyclone Fence Co., Waukegan, Ill.  
Gulf States Steel Co., Birmingham, Ala.

FIELD and Industrial, Wire  
Woven.)  
American Steel and Wire Co., Balt., Md.  
Cyclone Fence Co., Waukegan, Ill.  
Gulf States Steel Co., Birmingham, Ala.

FERTILIZERS Mixing Plants  
Grundler Crusher & Pulverizer Co., St.  
Louis, Mo.

FILTER (For Domestic and  
Industrial Purposes.)  
American Water Softener Co., Phila., Pa.  
Bacharach & Co., E. W., Kansas City,  
Mo.  
International Filter Co., Chicago, Ill.  
Roberts Filter Mfg. Co., Derby (Phil.), Pa.

FINANCING.  
Electric Bond & Share Co., New York.

FIREPROOF Building Material.  
Bamboo Pipe Co., Louisville, Ky.

Doors and Shutters.  
Wilson Corp., The J. G., New York City.

FITTINGS (Wire Rope.)  
American Steel & Wire Co., Chicago, Ill.  
Boeing's Sons Co., John A., Trenton,  
N. J.

FLANGES (Iron and Steel.)  
Dart Mfg. Co., E. M., Providence, R. I.  
Ryerson & Son, Inc., Jos. T., St. Louis  
and New York City.  
Taylor Forge & Pipe Wks., Chicago, Ill.  
U. S. Pipe & Foundry Co., Burlington,  
N. J.

SWIVEL.)  
Mero Nordstrom Valve Company, San  
Francisco, Cal.

FLOOR (Asphalt Mastic.)  
Barber Asphalt Co., Philadelphia, Pa.

CORK COMPOSITION.)  
Congoleum-Nairn Inc., Kearny, N. J.

LINOLEUM.)  
Congoleum-Nairn Inc., Kearny, N. J.

NORTHERN HARD MAPLE.)  
Holt Hardwood Co., Oconto, Wis.

OPEN STEEL.)  
Blaw-Knox Co., Pittsburgh, Pa.  
Kerlow Steel Flooring Co., Jersey City,  
N. J.

Covering.  
Congoleum-Nairn Inc., Kearny, N. J.

HARDNER (Concrete.)  
Sommer's Sons, Inc., L., New York.

PINTOS and STAIR TREADS.  
Central Iron & Steel Co., Harrisburg, Pa.

WAX.  
Congoleum-Nairn Inc., Kearny, N. J.

FLUMES.  
Aloe Products, Inc., New York, N. Y.

FLUSH-TANK SIPHONS.  
Pacific Flush-Tank Co., New York, N. Y.

FORMED PRODUCTS (Roofing.)  
American Rolling Mill Co., Middletown.

FORMS, Steel (For Concrete  
Culverts, Roads, Streets, Curbs,  
Sidewalks, Tiles.)  
Blaw-Knox Co., Pittsburgh, Pa.

FOUNDRIES and Machine Shops.  
General Machine Works, York, Pa.  
Glimmerglass Pipe & Fdy. Co., Lynchburg,  
Va.  
Golden's Fdy. & Mach. Co., Columbus, Ga.  
Lombard Iron Works & Supply Co., Augusta, Ga.

**MOUNTAIN STATE STEEL FOUNDRY**, Parkersburg, W. Va.  
Richmond Foundry & Mfg. Co., Richmond, Va.

**FOUNDRY Equipment and Supplies.**  
Hill & Griffith Co., Cincinnati, O.

—**Facings (Tale and Soapstone.)**  
Hill & Griffith Co., Cincinnati, O.

**FURNACES (Water-Cooled.)**  
Fisher Lehigh Co., Fallerton, Pa.

**GALVANIZED Material.**  
Bessemer Galvanizing Works, Birmingham, Ala.  
Cattie & Bros., Joe P., Philadelphia, Pa.  
Enterprise Galvanizing Co., Phila., Pa.  
—**Steel and Iron.**  
American Rolling Mill Co., Middletown, O.  
American Sheet & Tin Plate Co., Pittsburgh, Pa.

**GALVANIZING (Hot Dip.)**  
Bessemer Galvanizing Works, Birmingham, Ala.  
Cattie & Bros., Joe P., Philadelphia, Pa.  
Enterprise Galvanizing Co., Phila., Pa.  
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.

**GAS HOLDERS.**  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Birmingham.

—**Producers**  
Wood & Co., E. D., Philadelphia, Pa.

**GASOLINE and KEROSENE.**  
 Gulf Refining Co., Pittsburgh, Pa.

**GATES (Waterworks—Irrigation, etc.)**  
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.

**GEARS.**  
DeLaval Steam Turbine Co., Trenton, N.J.  
Erico Gear & Machine Co., Phila., Pa.  
General Electric Co., Schenectady, N.Y.

—**(Worm Reduction.)**  
DeLaval Steam Turbine Co., Trenton, N.J.

**GENERATORS, MOTORS (New.)**  
General Electric Co., Schenectady, N.Y.

—**(Used.)**  
O'Brien Machinery Co., Phila., Pa.

**GEODEISTS. (See Engineers Geological.)**

**GLASS (Art.)**  
Hirsh Turner Glass Co., Philadelphia, Pa.

—**(Plate.)**  
Hirsh Turner Glass Co., Philadelphia, Pa.

—**(Window.)**  
Hirsh Turner Glass Co., Philadelphia, Pa.  
Pittsburgh Plate Glass Co., Pittsburgh.

—**(Wire.)**  
Hirsh Turner Glass Co., Philadelphia, Pa.

**GRADERS (Elevating.)**  
Caterpillar Tractor Co., Peoria, Ill.

**GRANITE (Building and Monumental.)**  
North Carolina Granite Corp., The, Mount Airy, N.C.

**GRATES and Grate Bars.**  
Schofield's Sons Co., J. S., Macon, Ga.

**GRATING (Area, Flooring, Sidewalk.)**  
Blaw-Knox Co., Pittsburgh, Pa.  
Hendrick Mfg. Co., Carbondale, Pa.  
Keweenaw Steel Flooring Co., Jersey City, N.J.

**GRAVEL (Roofing and Road.)**  
American Limestone Co., Knoxville, Tenn.  
Arundel Corp., The, Baltimore, Md.  
Barley & Co., W. W., Roanoke, Va.  
Friend & Co., Inc., Petersburg, Va.  
Georgia Sand & Gravel Co., Augusta, Ga.

**GREASE Cups.**  
Lambachimer Co., The, Cincinnati, O.

**GRILLES (Brass, Bronze, Steel, etc.)**  
Manhattan Perforated Metal Co., Inc., Long Island City, N.Y.

**GRINDERS WHEELS.**  
Carborundum Co., Niagara Falls, N.Y.

**GUARD RAIL (Road.)**  
National Traffic Guard Co., Atlanta.

**GUNITE CONSTRUCTION.**  
Camerun Gun Construction Co., Chicago.  
Gunite Constr. & Constr. Co., Kansas City.  
Gunite Constr. Co., New York City.  
White Co., Arthur J., Pittsburgh, Pa.

**GUNPOWDER.**  
DuPont de Nemours & Co., Inc., E.I., Wilmington, Del.

**GUNS (Hydraulic.)**  
Georgia Iron Works, Augusta, Ga.

**HANGARS (Airplane.)**  
Blaw-Knox Co., Pittsburgh, Pa.  
Ingraham Iron Works, Birmingham, Ala.

**HARBOR IMPROVEMENTS.**  
Arundel Corp., Baltimore, Md.  
Atlantic, Gulf & Pacific Co., New York.

**HEATERS (Asphalt.)**  
Hoover Co., Joe, Cincinnati, O.

**HEAT EXCHANGERS.**  
Aero Products, Inc., New York, N.Y.

**HEATING Apparatus (Engineers and Contractors.)**  
Peer Piping & Heating Co., Greenville, S.C.

**HOISTS (Electric, Gasoline.)**  
Dake Engine Co., Grand Haven, Mich.

—**(Steam.)**  
Dake Engine Co., Grand Haven, Mich.

**HOPPERS (Aggregate, Measuring and Weighing.)**  
Blaw-Knox Co., Pittsburgh, Pa.

**HOTELS.**  
Southern Hotel, The, Baltimore, Md.

**HUMIDIFYING AND DRYING EQUIPMENT.**  
Niagara Blower Co., New York, N.Y.

**HYDRANTS (Fire.)**  
Ladlow Valve Mfg. Co., The, Troy, N.Y.  
Myers & Bros. Co., The, P. E., Ashland, O.  
Wood & Co., E. D., Philadelphia, Pa.

**HYDRO - ELECTRIC POWER COMPANIES (Offering Industrial and Commercial Opportunities.)**  
Appalachian Electric Power Co., Roanoke, Va.  
Crisp County Power Commission, Cordele, Ga.  
Seaboard Public Service Co., Alexandria, Va.  
Texas Power & Light Co., Dallas, Texas.

**INCINERATORS.**  
Brooke-Fisher Co., Atlanta, Ga.  
D-N Corporation, Winston-Salem, N.C.  
Geden, Joseph, Chicago, Ill.

**INCORPORATORS.**  
Delaware Registration Trust Co., Wilmington, Del.

**INSULATING BOARD.**  
United Cork Companies, Lyndhurst, N.J.

—**Materials.**  
General Electric Co., Schenectady, N.Y.

—**Quilt.**  
Cabot, Inc., Samuel, Boston, Mass.

**INVESTMENT SECURITIES.**  
Electric Bond & Share Co., New York.  
Hanchett Bond Co., Inc., The, Chicago, Ill.  
Nuveen & Co., John, Chicago.  
Provident Savings Bank & Trust Co., Cincinnati, Ohio.

**IRON.**  
Oliver Iron & Steel Corp., Pittsburgh, Pa.  
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

—**(Ingot, For Culverts, etc.)**  
American Rolling Mill Co., Middletown, O.

**JAIL CELLS.**  
Roanoke Iron & Bridge Works, Roanoke, Va.

**JOINTS (Pipe.)**  
Laddit Co., Philadelphia, Pa.

**For 36 Years** **HILL** **{ has meant highest reputation in Foundry Supplies**

Facings, Plumbago, Core Compound, Parting and Every Foundry Requirement

*Write for prices*

**THE HILL & GRIFFITH CO.**

*Factories and Offices:*

**CINCINNATI, OHIO  
BIRMINGHAM, ALA.**

*Warehouse:*  
**CHICAGO, ILL.**

**CEMENT-GUN CONSTRUCTION CO.**  
**GUNCRETE**

16 years experience placing sand and cement mortar with compressed air. Call our Engineering or Contracting Department for service.

537 S. Dearborn St. Oliver Building Woolworth Building CHICAGO PITTSBURGH NEW YORK

Designers and Fabricators of Hot Galvanized Steel Structures  
**TRANSMISSION and Radio Towers  
Substation Structures  
Standard Poles**  
Quotations on request  
**Bessemer Galvanizing Works**  
Birmingham, Alabama

**MOUNT AIRY GRANITE**  
Peerless Beauty and Strength  
THE NORTH CAROLINA GRANITE CORP'N.  
Mount Airy, N.C.

**GUNITE**  
CONSTRUCTION COMPANY

Specialists in all kinds of Cement Gun Work  
Contracts taken everywhere—Estimates furnished  
Room 1630 GRAYBAR BLDG., 420 Lexington Ave., N.Y. City  
Telephone Mohawk 4-5675

**GUNITE METHOD**  
Specialists in CEMENT GUN CONSTRUCTION

Contracts Executed Anywhere  
GUNITE CONCRETE AND CONSTRUCTION CO.  
BARCLAY A. GREENE, President  
1301 Woodswether Road, Kansas City, Mo.  
BRANCH OFFICES: St. Louis, Mo.; Chicago, Ill.; Birmingham, Ala.; Dallas, Tex.; New Orleans, La.; Atlanta, Ga.

17 Years Experience in  
**Cement-Gun Work**  
ARTHUR J. WHITE CO.  
Specialists in Gunite Construction  
Contracts Taken Anywhere Estimates Furnished  
1201 UNION TRUST BUILDING, PITTSBURGH, PA.  
Phone Atlantic 0908

**Creosoted Ties, Piling, Poles and Timbers****Creosote Oil****Docks for Ocean Vessels****American Creosote Works, Inc.**

New Orleans, La.

**Atlantic Creosoting Co., Inc.**

Savannah, Ga.

Norfolk, Va.

**PRESSURE APPLIED PRESERVATIVES**

ZMA and/or CREOSOTE pressure treated building materials enable you to use lumber that is fully protected against decay, dry rot and termite attack.

The final cost of treated lumber is much less than untreated. When you think of wood treating you should consider Eppinger & Russell Co., for we have been pioneers in this field since 1878.

It will pay you to consult our engineers.

WOOD PRESERVERS SINCE 1878  
**EPPINGER & RUSSELL CO.**  
13 Park Place, NEW YORK CITY  
Plants—Jacksonville, Fla., and Long Island City, N. Y.

**CREOSOTED**  
PINE AND OAK  
POLES · PILES · TIES · TIMBERS  
TREATING PLANTS AND YARDS  
BROWNVILLE, ALA.  
LOUISVILLE, KY.  
BROWN WOOD PRESERVING CO.  
LOUISVILLE, KY.

**What Makes a Good Tank?**

It is the knowing how to design and construct a tank that will give good, long, honest, dependable service year in and year out without a hitch.

Caldwell Steel Tanks are the result. Engineers designed them according to approved engineering principles. A company with over thirty years of tank-building experience produces them.

Caldwell Steel Tanks are made of the finest steel and carefully riveted so that there's no chance for break or leak.

These are but a few of Caldwell characteristics which contribute to the significance of our slogan—"The Tank With a Reputation."

Send for Catalog.

W. E. Caldwell Co., Incorporated  
1900 Brook St.,  
Louisville, Ky.

*Caldwell*  
TANKS  
AND  
TOWERS



**KETTLES (Pavers and Roofers.)**  
Houber Co. Jas., Cincinnati, O.

—(Used.)  
Delta Equipment Co., Philadelphia, Pa.  
O'Brien Machinery Co., Philadelphia, Pa.

**KILNS (Cement.)**  
Alo Products, Inc., New York, N. Y.

**MAIL CHUTES.**  
Cutler Mail Chute Co., Rochester, N. Y.

**LADDERS (Rolling.)**  
Myers & Bro. Co., The F. E., Ashland, O.

**MARBLE (Producers and Manufacturers.)**  
Georgia Marble Co., The, Tate, Ga.

**LAMPS (Incandescent.)**  
Western Electric Co., New York City.  
Westinghouse Lamp Co., New York City.

**METAL-Cutting Machinery.**  
Earle Gear & Machine Co., Phila., Pa.

**Fixtures (Electric.)**  
Western Electric Co., New York City.  
Westinghouse Lamp Co., New York City.

**Working Machinery.**  
Bliss Co., E. W., Brooklyn, N. Y.  
Ryerson & Son, Inc., Jas. T., St. Louis  
and New York City.

**LATHES.**  
Sebastian Lathe Co., Cincinnati, Ohio.

**MILL MACHINERY and SUPPLIES.**  
Lombard Iron Works & Supply Co., Au-

**LIGHTING (Factory and Mill.)**  
Westinghouse Lamp Co., New York City.

gusta, Ga.

**LININGS (Flue, Fire Clay.)**  
Lee Clay Products Co., Clearfield, Ky.  
Owensboro Sewer Pipe Co., Owensboro, Ky.

**MIXERS (Hot.)**  
National Equip. Corp., (Koehring, T. L.  
Smith, Kwik-Mix) Milwaukee, Wis.

**(Tube Mill.)**  
Feller Lehigh Co., Fullerton, Pa.

**MORTAR.**  
Chain Belt Co., Milwaukee, Wis.  
Jaeger Machine Co., Columbus, Ohio.

**LINOLEUM (Battleship,  
Embossed Inlaid, Inlaid, Jasper.)**  
Congoleum-Nairn Inc., Kearny, N. J.

**PLASTER.**  
Chain Belt Co., Milwaukee, Wis.  
Dunning & Bechert Press Co., Syracuse,  
N. Y.  
Jaeger Machine Co., Columbus, Ohio.

**LITHOGRAPHERS and EN-**  
GRAVERS.  
Smith & Son Co., Oscar T., Baltimore,  
Md.  
Young & Selden Co., Baltimore, Md.

**MOTORS (Electric.)**  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Armstrong & Bro. Co., H. S., Atlanta, Ga.  
Fairbanks, Morse & Co., Chicago, Ill.  
General Electric Co., Schenectady, N. Y.  
Western Electric Co., New York City.

**LOADING and UNLOADING**  
MACHINERY (Portable.)  
Northwest Engineering Co., Chicago, Ill.

**MOTOR TRUCKS.**  
International Harvester Co. of America,  
Inc., Chicago, Ill.

**LOCOMOTIVES (Compressed**  
Air.)  
Porter Co., H. K., Pittsburgh, Pa.

**NAILS (Cut.)**  
Reading Iron Co., Reading, Pa.

**(Fireless Stored Steam.)**  
Porter Co., H. K., Pittsburgh, Pa.

**and Spikes.**  
American Steel & Wire Co., Balta, Md.  
Tennessee Coal, Iron & Railroad Co.,  
Birmingham, Ala.  
Youngstown Sheet & Tube Co., Youngs-

**(Gasoline.)**  
Porter Co., H. K., Pittsburgh, Pa.  
Whitecomb Locomotive Co., Rochelle, Ill.

**WHITECOMB LOCOMOTIVE CO., ROCHELLE, ILL.**  
**Mining.)**  
Porter Co., H. K., Pittsburgh, Pa.  
Whitecomb Locomotive Co., Rochelle, Ill.

**NATURAL GAS COMPANIES.**  
(Offering Industrial and Com-  
mercial Opportunities.)  
Southern Natural Gas Corp., Birmingham.

**(Industrial.)**  
Porter Co., H. K., Pittsburgh, Pa.  
Southern Iron & Equipment Co., Atlanta.  
Whitecomb Locomotive Co., Rochelle, Ill.

**NUTS (Cold Punched.)**  
Oliver Iron & Steel Corp., Pittsburgh, Pa.  
Russell, Burdsall & Ward Bolt & Nut  
Co., Port Chester, N. Y.

**(Railway.)**  
Porter Co., H. K., Pittsburgh, Pa.  
Southern Iron & Equipment Co., Atlanta.  
Whitecomb Locomotive Co., Rochelle, Ill.

**OIL (Fuel and Gas.)**  
Gulf Refining Co., Pittsburgh, Pa.

**LUBRICANTS.**  
Gulf Refining Co., Pittsburgh, Pa.

**CUPS.**  
Lunkenheimer Co., The, Cincinnati, O.

**LUBRICATORS (Force Feed.)**  
Lunkenheimer Co., The, Cincinnati, O.

**ORE-WASHING MACHINERY.**  
Georgia Iron Works, Augusta, Ga.

**LUMBER (Ceiling, Flooring,**  
Siding.)  
Jackson Lumber Co., Lockhart, Ala.

**ORNAMENTAL BRONZE WORK.**  
Heath Co., J. S., Waukegan, Ill.

**(Creosoted.)**  
Amer. Creosote Wks., Inc., New Orleans.  
Amer. Creosoting Co., Inc., Louisville, Ky.  
Atlantic Creosoting Co., Norfolk, Va.  
Ayer & Lord Tie Co., Inc., Chicago.  
Brown Wood Preserving Co., Louisville,  
Ky.  
Eppinger & Russell Co., New York, N. Y.  
Gulf States Creos. Co., Hattiesburg, Miss.

**IRON WORK.**  
Austin Bros. Bridge Co., Atlanta, Ga.  
Roanoke Iron & Bridge Wks., Roanoke,  
Va.  
Snead Architectural Iron Works, Louis-  
ville, Ky.

**(Hardwoods, Cypress, etc.)**  
Reynolds Bros. Lbr. Co., Albany, Ga.

**METAL WORK. (Bronze, Iron,  
Steel, etc.)**  
Cincinnati Mfg. Co., Cincinnati, O.

**(Heavy Construction, Pitch,  
Pine, etc.)**  
Reynolds Bros. Lbr. Co., Albany, Ga.

**PAINT (Mill White, for Interior.)**  
Sonneborn Sons, Inc., L., New York.

**(Preservative.)**  
Cabot, Inc., Samuel, Boston, Mass.

**PANELBOARDS.**  
Adam Electric Co., Frank, St. Louis.

**PARTITIONS (Sectionfold, Roll-**  
ing, Wood.)  
Wilson Corp., The, J. G., New York.

**PATENT ATTORNEYS.**  
Buck, Sterling F., Washington, D. C.  
Coleman, Watson E., Washington, D. C.  
Eaton, Paul E., Charlotte, N. C.  
Sennett, Edward C., Washington, D. C.  
Seymour & Bright, Washington, D. C.

**MACHINERY (Special.)**  
Bertsch & Co., Cambridge City, Ind.  
Bliss Co., E. W., Brooklyn, N. Y.  
Earle Gear & Machine Co., Phila., Pa.  
General Machine Works, York, Pa.  
Gerding Bros., Cincinnati, O.

**—and Supplies (New and  
Used.)**  
Cincinnati Mechry. & Supply Co., Cin-  
cinnati, O.  
Electric Service Co., Cincinnati, Ohio.  
Marine Metal & Supply Co., New York.  
O'Brien Machinery Co., The, Phila., Pa.  
Partridge, Arthur S., St. Louis, Mo.  
Reading Engineering Wks., Reading, Pa.

**MACHINE TOOLS.**  
Sebastian Lathe Co., Cincinnati, Ohio.

**PATTERNS (Drawing, etc.)**  
Hans Patterns Co. & W., Atlanta, Ga.

**PAVING Blocks (Creosoted Wood.)**  
American Creosote Works, New Orleans.  
American Creosoting Co., Norfolk, Va.  
Ayer & Lord Tie Co., Chicago, Ill.

**Brick.**  
National Paving Brick Assn., Washington, D. C.

**Mixers.**  
National Equip. Corp., (Koehring, T. L. Smith) Milwaukee, Wis.

**Plant (Asphalt.)**  
Simplicity System Co., Chattanooga, Tenn.

**PENSTOCKS.**  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Wks., Birmingham.  
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Smith Co., S. Morgan, York, Pa.

**PERFORATED METAL.**  
Chicago Perforating Co., Chicago, Ill.  
Erdle Perforating Co., Rochester, N. Y.  
Harrington & King Perf. Co., Chicago.  
Hendrick Mfg. Co., Carbondale, Pa.  
Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.  
Mundt & Sons, Charles, Jersey City, N. J.

**PETROLEUM REFINERS.**  
Gulf Refining Co., Pittsburgh, Pa.

**PIG-IRON.**  
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

**PILES, POSTS, POLES (Creosoted.)**  
American Creosote Wks., New Orleans, La.  
American Creosoting Co., Louisville, Ky.  
Atlantic Creosoting Co., Norfolk, Va.  
Ayer & Lord Tie Co., Chicago, Ill.  
Brown Wood Preserving Co., Louisville, Ky.

**(Yellow Pine.)**  
Jackson Lumber Co., Lockhart, Ala.

**PILING—(Steel Sheet.)**  
Carnegie Steel Co., Pittsburgh, Pa.  
Hyman-Michael Co., Chicago, Ill.  
Jones & Laughlin Steel Corp., Pittsburgh, Pa.

**(Yellow Pine.)**  
Jackson Lumber Co., Lockhart, Ala.

**PILLOW BLOCKS.**  
Goldens' Fdy. & Mch. Co., Columbus, Ga.

**PIPE.**  
Albert & Davidson Pipe Corp., Brooklyn, N. Y.  
Albert Pipe Sup. Co., Inc., Brooklyn, N. Y.  
Birmingham Boiler & Engr. Co., Birmingham, Ala.  
Central Pipe & Supply Co., Charleston, W. Va.  
Greenapor's Sons Iron & Steel Co., St. Louis, Mo.  
Hudson Pipe & Supply Co., Bayonne, N. J.  
Maryland Pipe & Steel Corp., Baltimore, Md.  
National Tube Co., Pittsburgh, Pa.  
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.  
Power Piping Co., Pittsburgh, Pa.

**(Cast Iron.)**  
Cast Iron Pipe Research Assn., Chicago.  
Glamorgan Pipe & Fdry. Co., Lynchburg, Va.  
U. S. Pipe & Fdry. Co., Burlington, N. J.

**(Hammer-Welded.)**  
National Tube Co., Pittsburgh, Pa.

**(Iron and Steel.)**  
American Rolling Mill Co., Middletown.

**(Second-Hand.)**  
Albert & Davidson Pipe Corp., Brooklyn, N. Y.  
Albert Pipe Sup. Co., Inc., Brooklyn, N. Y.  
Central Pipe & Sup. Co., Charleston, W. Va.  
Greenpoint Iron & Pipe Co., Inc., Brooklyn, N. Y.  
Hudson Pipe & Supply Co., Bayonne, N. J.  
Machinery Record, Richmond, Va.  
Marine Metal & Supply Co., New York.  
Maryland Pipe & Steel Corp., Baltimore, Md.

**(Spiral Riveted.)**  
Taylor Forge & Pipe Wks., Chicago, Ill.

**(Spiral Welded.)**  
American Rolling Mill Co., Middletown.

**—(Steel.)**  
Bethlehem Steel Co., Bethlehem, Pa.  
Chicago Bridge & Iron Wks., Birmingham.  
Jones & Laughlin Steel Corp., Pittsburgh, Pa.  
National Tube Co., Pittsburgh, Pa.  
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.  
Power Piping Co., Pittsburgh, Pa.  
Youngstown Sheet & Tube Co., Youngstown, Ohio.

**—(Steel, Large Diameter.)**  
Aico Products, Inc., New York, N. Y.

**—(Wrought Iron.)**  
Reading Iron Co., Reading, Pa.

**—Covering (Cork.)**  
United Cork Companies, Lyndhurst, N. J.

**—Fittings.**  
Georgia Iron Works, Augusta, Ga.

**—Unions and Joints.**  
Dart Mfg. Co., E. M., Providence, R. I.

**—Systems (Industrial.)**  
Moore Pipe & Sprinkler Co., Jackson  
ville, Fla.  
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.  
Power Piping Co., Pittsburgh, Pa.

**POLES (Steel.)**  
American Rolling Mill Co., Middletown.  
Bethlehem Steel Co., Bethlehem, Pa.  
Carnegie Steel Co., Pittsburgh, Pa.  
Central Iron & Steel Co., Harrisburg, Pa.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Gulf States Steel Co., Birmingham, Ala.  
Jones & Laughlin Steel Corp., Pittsburgh, Pa.  
Ryerson & Son, Inc., Jos. T., St. Louis and New York City.  
Tennessee Coal, Iron & Railroad Co., Birmingham.

**POLES—(Tubular, Steel.)**  
Bessemer Galvanizing Works, Birmingham, Ala.  
National Tube Co., Pittsburgh, Pa.

**POLISHING MACHINERY.**  
(Wheels, Blocks.)  
Carborundum Co., Niagara Falls, N. Y.

**POSTS, (Cast Iron, Railway and Highway.)**  
U. S. Pipe & Foundry Co., Burlington, N. J.

**POWER TRANSMISSION MACHINERY.**  
Diamond Chain & Mfg. Co., Indianapolis.  
Goldens' Fdy. & Mch. Co., Columbus, Ga.  
Schofield's Sons Co., J. B., Macon, Ga.

**PRESSES, (Baling, Cottonseed Oil, Hydraulic and Power.)**  
Dunning & Boschart Press Co., Inc., Syracuse, N. Y.  
Ripley Foundry & Machine Co., Ripley, O.

**(Metal Stamping.)**  
Bliss Co., E. W., Brooklyn, N. Y.

**PRINTERS (Book, Catalog, Job.)**  
Smith & Son Co., Oscar T., Baltimore, Md.  
Young & Selden Co., Baltimore, Md.

**PRODUCER (Gas Machines.)**  
Wood & Co., R. D., Phila., Pa.

**PULLEYS (Friction Clutch.)**  
Caldwell Co., Inc., W. E., Louisville, Ky.

**Shafting and Hangers.**  
Goldens' Fdy. & Mch. Co., Columbus, Ga.

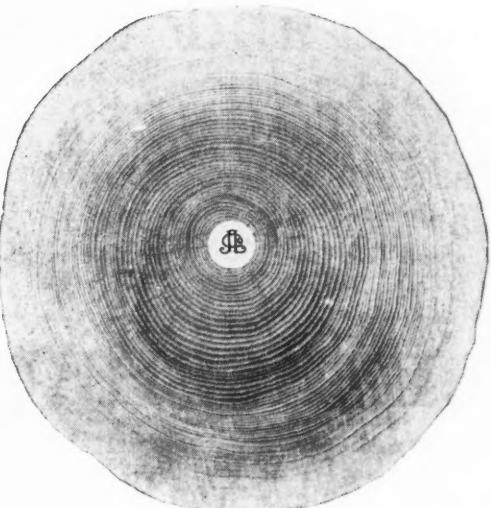
**PULVERIZED COAL EQUIPMENT.**  
Fuller Lehigh Co., Fullerton, Pa.

**PULVERIZERS (See Crushing and Pulverizing Machinery.)**

**PUMPING MACHINERY.**  
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.  
Fairbanks, Morse & Co., Chicago, Ill.  
Layne & Bowler, Inc., Memphis, Tenn.  
Myers & Bro. Co., The F. E., Ashland, O.  
Virginia Mch. & Well Co., Richmond, Va.

**PUMPS (Air.)**  
Manistee Iron Works Co., Manistee, Mich.

**(Boiler Feed.)**  
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City



Cross Section, 12" in diameter, typical of Jackson Lumber Company's Dense Long Leaf Yellow Pine

## THIS SHOWS WHY DIXIE PILING LASTS!

Cut from Dense Growth Long Leaf Yellow Pine, on our own lands, Dixie Piling embodies the extreme durability inherent in this type of timber growth.

More than this positive factor of density at the heart, treatment penetration of sap wood is one hundred per cent.

Order untreated DIXIE Piles direct from us.

SPECIFY DIXIE stock when ordering TREATED Piles from your dealer.

We are distributors, east of the Mississippi River, of Douglas Fir Piling produced by Chas. R. McCormick Lumber Co., Portland, Ore.



TRADE MARK

Selling Agent

GEORGE G. LEAVETTE  
Room 416, 25 Broadway, New York City

## JACKSON LUMBER CO.

Manufacturers

Lockhart, Alabama

A CROSSETT WATZEK GATES INDUSTRY

# Iron and Steel Products

BETHLEHEM STEEL COMPANY  
General Offices: Bethlehem, Pa.

*District Offices:* New York, Boston, Philadelphia, Baltimore, Washington, Atlanta, Pittsburgh, Buffalo, Cleveland, Cincinnati, Detroit, Chicago, St. Louis.



*Pacific Coast Distributor:* Pacific Coast Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Honolulu.

## BETHLEHEM

**Bristol Steel & Iron Works, Inc.**  
STRUCTURAL STEEL FOR BRIDGES, BUILDINGS  
AND ALL INDUSTRIAL PURPOSES  
STEEL PLATE & MISCELLANEOUS IRON WORK  
BRISTOL, VA.—TENN.



**BELMONT IRON WORKS**  
PHILADELPHIA NEW YORK  
Southern Sales Office, Charlotte, N. C.  
Engineers Contractors Exporters  
Structural Steel  
Shop and Field Welded Steel Buildings

**ROANOKE IRON & BRIDGE WORKS, Inc.**  
Structural and Ornamental Iron  
Wrought Steel Fences  
Steel Bridges  
Jail Cells  
Write for Estimates ROANOKE, VA.

**Snead Architectural Iron Works**  
STRUCTURAL STEEL  
ORNAMENTAL IRON  
LOUISVILLE, KY.

### No. 10 Ball Bearing Punch



Weight 8½ lbs. Capacity  
¾-inch hole through ¾-  
inch iron.

### No. 7 Roller Bearing Punch



Capacity ¼" thru ¾".  
Weight, 6½ lbs. This style  
made in 3 sizes, Nos. 7,  
7½ and 8.

Write for Catalog and Price List on Entire Line  
**WHITNEY METAL TOOL COMPANY**  
117 FORBES STREET ROCKFORD, ILL.

### No. 455 Angle Iron Combination



Capacity 2" x 2" x  
2" x 1½" angle  
iron. Weight  
225 lbs.

SPEED  
Notches and  
Bends  
2" x 2" x  
1½"  
Angle  
Iron in  
One  
Minute  
Flat.

DeLaval Steam Turbine Co., Trenton, N.J.  
Manistee Iron Works Co., Manistee, Mich.  
Myers & Bro. Co., The F. E. Ashland, O.

#### —(Centrifugal.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Cameron, A. S., Steam Pump Works  
(Ingersoll-Rand Co.), New York City.  
DeLaval Steam Turbine Co., Trenton, N.J.  
Fairbanks, Morse & Co., Chicago, Ill.  
LaTour Co., Elkhart, Ind.  
Layne & Bowler, Inc., Memphis, Tenn.  
Manistee Iron Works Co., Manistee, Mich.

#### —(Deep Well.)

Layne & Bowler, Inc., Memphis, Tenn.  
Dunning & Bechtel Press Co., Inc.,  
Syracuse, N.Y.

#### —(Hydraulic.)

Fuller Lehigh Co., Fullerton, Pa.

—(Pulverized Coal.)  
Georgia Iron Works, Augusta, Ga.

#### —(Sand and Dredging.)

Georgia Iron Works, Augusta, Ga.

#### —(Steam.)

Cameron, A. S., Steam Pump Works  
(Ingersoll-Rand Co.), New York City.  
Fairbanks, Morse & Co., Chicago, Ill.

#### —(Water Works.)

Layne & Bowler, Inc., Memphis, Tenn.  
Manistee Iron Works Co., Manistee, Mich.

### PUNCHING AND SHEARING MACHINERY.

Bertsch & Co., Cambridge City, Ind.  
Bliss Co., E. W., Brooklyn, N.Y.  
Whitney Metal Tool Co., Rockford, Ill.

### QUANTITY SURVEYS.

Spring, Chas. Herbert, Greensboro, N.C.

### RACK RAKES.

Newport News Shipbuilding & Dry Dock  
Co., Newport News, Va.

### RADIATOR ENCLOSURES.

Manhattan Perforated Metal Co., Inc.,  
Long Island City, N.Y.

### RAILINGS (Iron Pipe.)

Pipe Railings Co., Long Island  
City, N.Y.

### RAILROAD Equipment and Supplies (New.)

Robinson & Orr, Pittsburgh, Pa.

### —Equipment and Supplies. (Used.)

Dyer Co., W. H., St. Louis, Mo.  
Smith & Co., W. M., Birmingham, Ala.  
Southern Iron and Equip. Co., Atlanta.

### —(Frogs and Switches.)

Bethlehem Steel Co., Bethlehem, Pa.  
Robinson & Orr, Pittsburgh, Pa.

### RAILROADS — (Offering Industrial, Agricultural and Commercial Opportunities.)

Atlanta and West Point R. R., Atlanta.  
Central of Georgia Rwy., Savannah, Ga.  
Model Land Company, Flagler System,  
St. Augustine, Fla.  
Norfolk & Western Railway, Roanoke, Va.

### RAILS (New and Used.)

Carnegie Steel Co., Pittsburgh, Pa.  
Dyer Co., W. H., St. Louis, Mo.  
Hyman-Michels Co., Chicago, Ill.  
Perry, Burton, Doane Co., Philadelphia.  
Robinson & Orr, Pittsburgh, Pa.  
Smith & Co., W. M., Birmingham, Ala.  
Southern Iron & Equip. Co., Atlanta, Ga.  
Sweet's Steel Co., Williamsport, Pa.  
Tennessee Coal, Iron & Railroad Co.,  
Birmingham, Ala.

### RAILWAYS (Marine.)

Charleston Dry Dock and Machine Co.,  
Charleston, S.C.

### RECEPTACLES (Self-Closing — Waste Paper.)

Whitaker Paper Co., Baltimore, Md.

### REINFORCING for Concrete.

American Steel and Wire Co., Balt., Md.  
Austin Bros. Bridge Co., Atlanta, Ga.  
Carnegie Steel Co., Pittsburgh, Pa.  
Dietrich Brothers, Baltimore, Md.  
Gulf States Steel Co., Birmingham, Ala.

Jones & Laughlin Steel Corp., Pittsburgh, Pa.  
Oliver Iron & Steel Corp., Pittsburgh, Pa.  
Ryerson & Son, Inc., Jos. T., St. Louis and  
New York City.

### RIVER & HARBOR IMPROVEMENTS. (Dredging, Docks, Wharves, etc.)

Armed Corp., The, Baltimore, Md.  
Atlantic Gulf and Pacific Co., New York  
Kansas City Bridge Co., Kansas City.

### RIVETS.

Burke, Burdall & Ward Bolt & Nut  
Co., Port Chester, N.Y.

### ROAD and Street Machinery.

Blaw-Knox Co., Pittsburgh, Pa.  
Buffalo-Springfield Roller Co., Springfield, O.  
Caterpillar Tractor Co., Peoria, Ill.  
Gillie Machine Co., Tonawanda, N.Y.  
Universal Crane Co., Lorain, Ohio.

#### —and Street Material.

Bailey & Co., W. W., Roanoke, Va.  
Woodstock Slag Corp., Birmingham, Ala.

#### —Graders and Scrapers.

Caterpillar Tractor Co., Peoria, Ill.

#### —Oils and Preservatives.

Gulf Refining Co., Pittsburgh, Pa.

#### —Rollers (Steam and Gasoline.)

Buffalo-Springfield Roller Co., Springfield, O.

#### —Scrapers.

Buffalo-Springfield Roller Co., Springfield, O.

### ROOF INSULATION.

United Cork Companies, Lyndhurst, N.J.

### ROOFING (Asphalt Built-Up.)

Barber Asphalt Co., Philadelphia, Pa.

#### —(Ready Prepared, Felt, Tar, Asbestos, Asphalt.)

Eubervil Co., New York City.

#### —and Siding (Composition.)

Eubervil Co., New York City.

#### —and Siding (Metal.)

American Rolling Mill Co., Middletown, O.  
American Sheet and Tin Plate Co., Pittsburgh, Pa.  
Gulf State Steel Co., Birmingham, Ala.  
Ryerson & Son, Inc., Jos. T., St. Louis and  
Youngstown Sheet and Tube Co., Youngstown, O.

### SAFES.

York Safe & Lock Co., York, Penna.

### SAND.

Arundel Corp., Baltimore, Md.  
Friend & Co., Inc., Petersburg, Va.  
Georgia Sand & Gravel Co., Augusta, Ga.

### SANITARY Drinking Fountains.

Bundis-Spence Mfg. Co., Milwaukee, Wis.

### SAWMILL Machinery.

Schofield's Sons Co., J. S., Macon, Ga.

### SAWS (Cold Metal.)

Earle Gear and Machine Co., Phila., Pa.

### SCRAP IRON AND STEEL.

Hunts Sons, M. J., Philadelphia, Pa.  
Perry, Burton, Doane Co., Philadelphia.  
Smith & Co., W. M., Birmingham, Ala.  
Southern Iron & Equip. Co., Atlanta, Ga.  
Sweet's Steel Co., Williamsport, Pa.  
Tennessee Coal, Iron & Railroad Co.,  
Birmingham, Ala.

### SCREEN CLOTH.

Summa Wire & Mfg. Co., Fostoria, Ohio.

### SCREENING (For Concrete and Road Construction.)

American Limestone Co., Knoxville, Tenn.

### SCREENS (Sand, Gravel, Stone, Coal, Ore, etc.)

Chicago Perfector Co., Chicago, Ill.  
Erie Perfector Co., Rochester, N.Y.  
Gremister Crusher & Pulverizer Co., St. Louis, Mo.  
Hendrick Mfg. Co., Carbondale, Pa.  
Mundt & Sons, Charles, Jersey City, N.J.  
Universal Crusher Co., Cedar Rapids, Ia.

**SCREW-MACHINE Products.**  
Progressive Mfg. Co., Torrington, Conn.

**SCREWS (Machine.)**  
Progressive Mfg. Co., Torrington, Conn.

**SEAWALLS.**  
Shore-Line Builders, Inc., Jacksonville, Fla.

**SEWAGE Disposal Apparatus.**  
Pacific Flush-Tank Co., New York, N. Y.  
—Disposal System.  
D-N Corporation, Winston-Salem, N. C.

**SEWER Joint Compounds.**  
Leedite Co., Philadelphia, Pa.  
Pacific Flush-Tank Co., New York, N. Y.

—Pipes (Vitrified).  
Ramsen Pipe Co., Louisville, Ky.  
Lee Clay Products Co., Clearfield, Ky.  
Owensboro Sewer Pipe Co., Owensboro, Ky.

**SHAFTING.**  
Ryerson & Son, Inc., Jos. T., St. Louis and New York City.

—Material (Tubular).  
National Tube Co., Pittsburgh, Pa.

**SHARPENING Stones.**  
Cutterstones Co., Niagara Falls, N. Y.

**SHEET Metal Working Machinery.**  
Bertisch & Co., Cambridge City, Ind.  
Kiss Co., E. W., New Haven, N. Y.  
Whitney Metal Tool Co., Rockford, Ill.  
Yoder Co., The, Cleveland, Ohio.

—Steel and Iron.  
American Sheet and Tin Plate Co., Pittsburgh, Pa.  
Bethlehem Steel Co., Bethlehem, Pa.  
Gulf States Steel Co., Birmingham, Ala.  
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.  
Youngstown Sheet & Tube Co., Youngstown, O.

**SHEETS (Asbestos).**  
Eckerd Co., New York City.

—(Galvanized and Black).  
American Rolling Mill Co., Middletown.  
American Sheet & Tin Plate Co., Pittsburgh, Pa.

**SHINGLES (Asbestos).**  
Eckerd Co., New York City.

**SHIPBUILDING.**  
Charleston Dry Dock & Machine Co., Charleston, S. C.  
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.

**SHOVELS (Steam, Gas and Electric Power.)**  
Bucyrus-Erie Co., So., Milwaukee, Wis.  
National Equipment Corp., (Koehring), Milwaukee, Wis.  
Northwest Engineering Co., Chicago, Ill.  
Ohio Power Shovel Co., Lima, Ohio.

**SHUTTERS (Steel.)**  
Merchant & Evans Co., Philadelphia, Pa.

**SIGNALS. (Danger.)**  
Consolidated Iron-Steel Mfg. Co., Cleveland, O.

**SILICATE OF SODA.**  
Grasselli Chemical Co., Inc., Birmingham.

**SITES (Manufacturing.)**  
Appalachian Electric Power Co., Roanoke, Va.  
Atlanta and West Point R. R., Atlanta.  
Central of Georgia Rwy., Savannah, Ga.  
Galveston, City of Galveston, Texas.  
Missouri-Kansas-Texas Lines, Dallas, Tex.  
Model Land Company, (Flagler System), St. Augustine, Fla.  
Norfolk & Western Railway, Roanoke, Va.  
Parkersburg, W. Va., Board of Commerce.  
Bernoids Bros. Lbr. Co., Albany, Ga.  
Seaboard Public Service Co., Alexandria, Va.

Southern Natural Gas Corp., Birmingham.  
Texas Power & Light Co., Dallas, Texas.  
Industrial Commission, Winston-Salem, N. C.

**SLAG, For Concrete.**  
Woodstock Slag Corp., Birmingham, Ala.

—(Furnace).  
Woodstock Slag Corp., Birmingham, Ala.

**SLINGS (Wire Ropes.)**  
American Steel & Wire Co., Chicago, Ill.  
Boehler's Sons Co., John A., Trenton, N. J.

**SLUICE GATES AND APPARATUS.**  
Smith Co. & Morgan, York, Pa.

**SPEED REDUCERS.**  
Earle Gear & Mach. Co., Phila., Pa.

**SPIKES, (Railroad, Ship.)**  
Bethlehem Steel Co., Bethlehem, Pa.  
Sweet's Steel Co., Williamsport, Pa.

**SPREADER (Surfacing Material)**  
Gillie Machine Co., Tonawanda, N. Y.

**SPRINGS (Machinery, Railway, Spiral Steel.)**  
American Steel & Wire Co., Balto., Md.

—(Wire—All Kinds.)  
American Steel & Wire Co., Balto., Md.

**SPRINKLERS (Automatic Fire.)**  
Moore Pipe & Sprinkler Co., Jacksonville, Fla.

**SPROCKETS.**  
Diamond Chain & Mfg. Co., Indianapolis, Ind.

**STACKS (Iron and Steel.)**  
Birmingham Boiler and Engineering Co., Birmingham, Ala.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Birmingham.  
Downingtown Iron Works, Downingtown, Pa.  
Hedges Walsh Welding Co., Chattanooga, Tenn.  
Ingraham Iron Works Co., Birmingham, Ala.  
Lancaster Iron Works & Supply Co., Augusta, Ga.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Schofield's Sons Co., J. H., Mason, Ga.  
U. S. Pipe & Foundry Co., Burlington, N. J.  
Virginia Bridge & Iron Co., Roanoke, Va.

**STAINS (Shingle, Woodwork.)**  
Cabot, Inc., Samuel, Boston, Mass.

**STAIR TREADS.**  
Central Iron & Steel Co., Harrisburg, Pa.  
Ryerson & Son, Inc., Jos. T., St. Louis and New York City.

**STANDPIPES.**  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Birmingham.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

**STATIONERS (Envelopes, Letter and Billheads, etc.)**  
Smith & Son Co., Oscar T., Baltimore, Md.  
Young & Selden Co., Baltimore, Md.

**STEAM (Specialties.)**  
Lumkesheimer Co., The Cincinnati, O.  
Mueller Co., Decatur, Ill.

**STEEL.**  
Bethlehem Steel Co., Bethlehem, Pa.  
Central Iron & Steel Co., Harrisburg, Pa.  
Dietrich Brothers, Baltimore, Md.  
Gulf States Steel Co., Birmingham, Ala.  
Jones & Laughlin Steel Corp., Pittsburgh, Pa.  
Oliver Iron & Steel Corp., Pittsburgh, Pa.  
Ryerson & Son, Inc., Jos. T., St. Louis and New York City.  
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.  
Virginia Bridge & Iron Co., Roanoke, Va.

—(Cold Rolled.)  
American Steel & Wire Co., Balto., Md.

—(Fabricators.)  
United Welding Co., Middletown, O.

—(Tool, High Speed.)  
Bethlehem Steel Co., Bethlehem, Pa.

—Buildings (Designers and Builders.)  
American Bridge Co., New York, N. Y.  
Belzona Iron Works, Philadelphia, Pa.  
Carolina Steel & Iron Co., Greensboro, N. C.

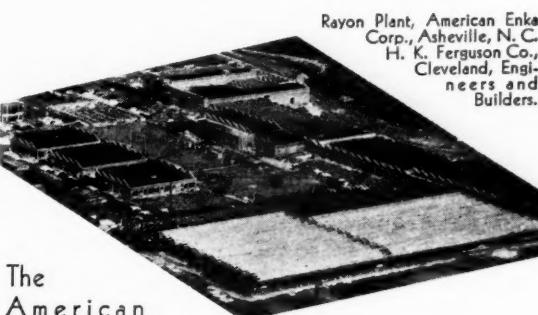
Ingalls Iron Works Co., Birmingham, Ala.  
McClintic-Marshall Co., Pittsburgh, Pa.

Phoenix Iron Co., The, Phila., Pa.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Virginia Bridge & Iron Co., Roanoke, Va.

—Forms (Curb, Gutter, Sidewalk, Road.)  
Blaw-Knox Co., Pittsburgh, Pa.

## A LANDSCAPE GONE INDUSTRIAL



Rayon Plant, American Enka Corp., Asheville, N. C.  
H. K. Ferguson Co., Cleveland, Engineers and Builders.

The American Enka Plant is said to be the largest initial installation for rayon manufacture so far built. We furnished the 5000 tons of steelwork required. There was one item of over 300 trusses weighing 4 tons each which were gotten out by our Birmingham plant.

**VIRGINIA BRIDGE & IRON CO.**  
Roanoke Birmingham Memphis Atlanta New Orleans  
New York Los Angeles Charlotte Dallas El Paso

**VIRGINIA BRIDGE**  
STEEL STRUCTURES

## DIETRICH BROTHERS

Structural and Ornamental Iron and Steel Works  
Large Stock of Standard and Bethlehem Shapes  
**CONCRETE REINFORCEMENTS**  
**BALTIMORE, MD.**

**CAROLINA STEEL & IRON COMPANY**  
GREENSBORO, N. C.

Sales Office:—709 Nissen Bldg., WINSTON-SALEM, N. C.  
**Structural Steel for Buildings and Bridges**  
Capacity 1000 Tons per Month. 3000 Tons in Stock  
The Largest Steel Fabricators in the Carolinas

**THE PHOENIX IRON CO.**  
MANUFACTURERS OF OPEN HEARTH

Structural Steel Shapes, Beams,  
Channels, Angles, and Ship Shapes

Works: Phoenixville, Pa. Main Offices: Philadelphia, Pa.

### OFFICES:

22 S. 15th St., Philadelphia 30 Church St., New York  
Munsey Building, Washington 110 State St., Boston  
City Savings Bk. Bldg., Albany, N. Y. 26 Victoria St., London

**THE PHOENIX BRIDGE CO.**

Engineers, Fabricators, and Erectors  
Bridges and Other Structures of Steel

CAPACITY 60,000 TONS

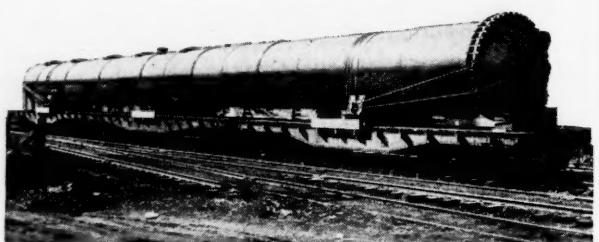
Works and Engineering Office: Phoenixville, Pa.

# COLE

**TANKS & VATS  
for ACID STORAGE  
NH<sub>3</sub>, STORAGE,  
Aluminum  
Alloy Steels  
Lead Lined  
Monel Metal  
Tin Lined**

**BOILERS—HRT  
and MANNING  
JACKETED KETTLES  
AGITATOR TANKS  
BUBBLE TOWERS  
GAS SCRUBBERS  
WELDED STEEL PIPE  
CREOSOTING CYLINDERS**

**Metal Plate Work**



*Cole Creosoting Cylinder 8' diameter x 138' long.*



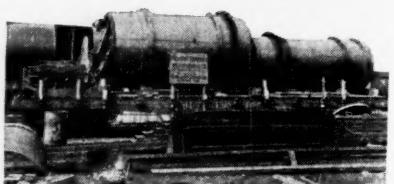
**R. D. COLE MANUFACTURING CO.**

Established 1854

NEWNAN, GA.

New York Office,  
5 Beckman St.

# SOUTHLAND PRODUCTS



**STAND  
PIPES  
SMOKE  
STACKS  
TOWERS  
AND  
TANKS  
STEEL  
RIVETED  
PIPE**

**CHATTANOOGA BOILER & TANK CO.  
Chattanooga, Tenn.**



**TANKS AND  
STEEL PLATE WORK  
Write nearest office for prices**

**CHICAGO BRIDGE  
& IRON WORKS**

Birmingham . . . . . 1530 Fifteenth St. N.  
Dallas . . . . . 1208 Burt Bldg.  
Also Chicago—New York—Cleveland—  
Tulsa—Houston—Detroit—Philadelphia—  
Boston—San Francisco—Seattle—Los  
Angeles—Havana

**IF YOU WANT TO GET—  
Southern Business  
Advertise in the  
MANUFACTURERS RECORD**

—Plate Construction (Riveted or Welded.)  
Birmingham Boiler & Engr. Co., Birmingham, Ala.  
Birmingham Tank Co., Birmingham, Ala.  
Bristol Steel & Iron Works, Inc., Bristol, Va.  
Carolina Steel & Iron Co., Greensboro, N. C.  
Central Iron & Steel Co., Harrisburg, Pa.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Wks., Birmingham, Alabama  
Downingtown Iron Works, Downingtown, Pa.  
Hedges Walsh Welder Co., Chattanooga, Tenn.  
Ingalls Iron Works Co., Birmingham, Ala.  
Phoenix Iron Co., The, Phila., Pa.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Schedler's Sons Co., J. S., Macon, Ga.  
United Welding Co., Middletown, O.  
—(Elevated Wood.)  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Davis & Son, G. M., Palatka, Fla.

—(Iron and Steel.)  
American Bridge Co., New York, N. Y.  
Birmingham Tank Co., Birmingham, Ala.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Wks., Birmingham, Ala.  
Cole Mfg. Co., R. D., Newnan, Ga.  
Downingtown Iron Works, Downingtown, Pa.  
Finnigan Co., Inc., J. J., Atlanta, Ga.  
Lancaster Iron Works & Supply Co., Augusta, Ga.  
McClintic-Marshall Co., Pittsburgh, Pa.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Schedler's Sons Co., J. S., Macon, Ga.  
Titusville Iron Works Co., Titusville, Pa.  
Virginia Bridge & Iron Co., Roanoke, Va.  
Westinghouse Traction Brake Co., Wilmerding, Pa.

—(Stills.)  
Alo Products, Inc., New York City.  
—(Stokers (Mechanical.)  
Alabama Stoker & Boiler Co., Birmingham, Ala.  
Babcock & Wilcox Co., The, New York.  
Detroit Stoker Company, Detroit, Mich.

—(Storage.)  
General Warehouse & Storage Co., Atlanta, Ga.

—(Storage Batteries.)  
Electric Storage Battery Co., Philadelphia.

—(Bins (Steel.)  
Blaw-Knox Co., Pittsburgh, Pa.

—(Structural Steel and Iron.)

American Bridge Co., New York, N. Y.  
Austin Bros. Bridge Co., Atlanta, Ga.  
Belmont Iron Works, Philadelphia, Pa.  
Bristol Steel & Iron Works, Inc., Bristol, Va.  
Carnegie Steel Co., Pittsburgh, Pa.  
Carolina Steel & Iron Co., Greensboro, N. C.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Converse Bridge & Steel Co., Chattanooga, Tenn.  
Dietrich Brothers, Baltimore, Md.  
Ingraham Jones & Laughlin Steel Corp., Pittsburgh, Pa.  
McClintic-Marshall Co., Pittsburgh, Pa.  
Phoenix Iron Co., The, Phila., Pa.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Roebling Iron & Bridge Works, Inc., Roanoke, Va.  
Byers & Son, Inc., Joe T., St. Louis and New York City.  
Sneed Architectural Iron Works, Louisville, Ky.  
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.  
Virginia Bridge & Iron Co., Roanoke, Va.

—(Wood.)  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Davis & Son, G. M., Palatka, Fla.  
Virginia Mch. & Well Co., Richmond, Va.

—(Tarpaulins.)  
Atlanta Tent & Awning Co., East Point, Ga.  
Fulton Bag & Cotton Mills, Atlanta, Ga.

—(Tax Specialists.)  
Ernst & Ernst, New York, N. Y.  
—(Telephone Service.)  
American Telephone & Telegraph Co.

—(Tents.)  
Fulton Bag & Cotton Mills, Atlanta, Ga.

—(Textile Chemicals.)  
Grasselli Chemical Co., Inc., Birmingham.

—(Tile (Cork Composition.)  
Congoleum-Nairn Inc., Kearny, N. J.

—(Cork Flooring.)  
Congoleum-Nairn Inc., Kearny, N. J.  
United Cork Companies, Lyndhurst, N. J.

—(Floor.)  
Hood Co. B. Mittin, Daisy, Tenn.

—(Roof.)  
Hood Co. B. Mittin, Daisy, Tenn.

—(Sewer.)  
Lee Clay Products Co., Clearfield, Ky.

—(Tin and Terne Plates.)  
American Sheet & Tin Plate Co., Pittsburgh, Pa.

—(Swinging Engines.)  
Dake Engine Co., Grand Haven, Mich.

—(Switchboards, Switches, Etc.)  
General Electric Co., Schenectady, N. Y.

—(Systems (Business.)  
Ernst & Ernst, New York, N. Y.

—(Tanks (Air Compressor.)  
Titusville Iron Works Co., Titusville, Pa.

—(Elevated Steel.)  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Chicago Bridge & Iron Wks., Birmingham, Ala.  
Cole Mfg. Co., R. D., Newnan, Ga.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Schedler's Sons Co., J. S., Macon, Ga.  
Virginia Bridge & Iron Co., Roanoke, Va.

—(S) (Giant  
beam.  
beam.  
beam.  
beam.)

Janua

—(B)  
Besse  
ham.

—(S)  
Chatt  
beam.  
beam.  
beam.)

—(S)  
Caterp  
Cleve  
Intern  
Inc.

—(R)  
Alle  
Caterp  
Cleve  
Wellman

—(U)  
Trans  
General

—(U)  
Electr  
Mechan

—(U)  
Trans  
(Galv  
Mechan

—(U)  
Trans  
Universal

—(U)  
Trans  
International  
Inc.

—(U)  
Tubes  
Tubes

—(U)  
Tubin  
National

—(U)  
Turbi  
Newport  
Co., N.  
Smith Co.

—(S)  
Alle-Cha  
Delaval  
General

—(A)  
Turne  
Bessell  
Co., P.

—(U)  
Turnt  
American  
Virginia

—(P)  
New-Eas

—(U)  
Valve  
Indust  
Leachme

—(C)  
La Bou

—(G)  
Ladd V  
Leachme

—(N)  
La Bou

—(S)  
Venti  
Montan

—(N)  
Wadd  
School

—(S)  
Wadd  
Winn

January 7, 1932

## CLASSIFIED INDEX FOR BUYERS

93

**(Radio.)** Bessemer Galvanizing Works, Birmingham, Ala.

**(Steel and Wood.)** Chattanooga Boiler & Tank Co., Chattanooga, Tenn. Oak Mfg. Co., R. D., Newnan, Ga.

**RACK (Portable or Permanent.)** Business Corp. of America, Chicago, Ill. Sweet's Steel Co., Williamsport, Pa.

**TRACTORS (Industrial.)** Caterpillar Tractor Co., Peoria, Ill. Cleveland Tractor Co., Cleveland, O. International Harvester Co. of America, Inc., Chicago, Ill.

**(Road.)** Allis-Chalmers Mfg. Co., Milwaukee, Wis. Caterpillar Tractor Co., Peoria, Ill. Cleveland Tractor Co., Cleveland, O.

**TRAILERS (Arch-Girder, Heavy Duty.)** Wellman Engr. Co., Cleveland, O.

**TRAMWAYS, (Aerial Wire Rope.)** American Steel & Wire Co., Balto., Md.

**TRANSFORMERS.** General Electric Co., Schenectady, N. Y.

**(Used.)** Electric Service Co., Cincinnati, O.

**TRANSMISSION TOWERS (Galvanized.)** McChesie-Marshall Co., Pittsburgh, Pa.

**TRENCH MACHINERY. See Excavators (Trench.)**

**TRI-SODIUM PHOSPHATE.** Grasselli Chemical Co., Inc., Birmingham.

**TRUCK CRANES.** Universal Crane Co., Lorain, O.

**TRUCKS (Motor.)** International Harvester Co. of America, Inc., Chicago, Ill.

**TUBES (Boiler.)** See Boiler Tubes.

**TUBING (Seamless Steel.)** National Tube Co., Pittsburgh, Pa.

**TURBINES (Hydraulic.)** Newport News Shipbuilding & Dry Dock Co., Newport News, Va. Smith Co., S. Morgan, York, Pa.

**(Steam.)** Allis-Chalmers Mfg. Co., Milwaukee, Wis. Delaval Steam Turbine Co., Trenton, N.J. General Electric Co., Schenectady, N. Y.

**TURNBUCKLES.** Bissell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.

**TURNTABLES.** American Bridge Co., New York, N. Y. Virginia Bridge & Iron Co., Roanoke, Va.

**(Portable for Motor Trucks.)** New-Knox Co., Pittsburgh, Pa.

**UNIONS.** Dan Mfg. Co., E. M., Providence, R. I.

**VALVES.** Leland Valve Mfg. Co., The, Troy, N. Y. Lankemheimer Co., The, Cincinnati, Ohio. Morse-Nordstrom Valve Co., San Francisco, Cal. Mueller Co., Decatur, Ill. Newport News Shipbuilding & Dry Dock Co., Newport News, Va. Westinghouse Traction Brake Co., Waukegan, Pa.

**(Acid Proof.)** Lankemheimer Co., The, Cincinnati, Ohio.

**(Corrosive Liquids.)** La Bour Co., Elkhart, Ind.

**(Gate.)** Leland Valve Mfg. Co., The, Troy, N. Y. Lankemheimer Co., The, Cincinnati, Ohio. Wood & Co., R. D., Philadelphia, Pa.

**(Non-Corrosive Liquids.)** La Bour Co., Elkhart, Ind.

**VAULTS (Bank and Safe Deposit.)** Tut Safe & Lock Co., York, Penna.

**VENTILATORS (Roof.)** Merchant & Evans Co., Philadelphia, Pa.

**WARDROBES (Hygienic, School.)** White Corp., The J. G., New York.

**WAREHOUSING.** General Warehouse & Storage Co., Atlanta, Ga.

**WATER HEATERS.** Finnigan Co., Inc., J. J., Atlanta, Ga.

**WATERPROOFING (For Brick, Concrete, Granite.)** Sonnenborn, Sons, Inc., L., New York.

**WATER Purification.** Behrach & Co., E. W., Kansas City, Mo. International Filter Co., Chicago, Ill. Roberts Filter Mfg. Co., Darby (Phila.), Pa.

**Softening Apparatus (Purifying.)** American Water Softener Co., Phila., Pa. International Filter Co., Chicago, Ill.

**Works Supplies and Appliances.** Cast Iron Pipe Research Assn., Chicago. Glamorgan Pipe & Fdry. Co., Lynchburg, Va.

Leads Co., Philadelphia, Pa. Mueller Co., Decatur, Ill. U. S. Pipe & Foundry Co., Burlington, N. J.

Wood & Co., R. D., Philadelphia, Pa.

**WELDING.** Charleston Dry Dock & Machine Co., Charleston, S. C.

Hedges-Walsh-Weldner Co., Chattanooga, Tenn. Newport News Shipbuilding & Dry Dock Co., Newport News, Va.

United Welding Co., Middletown, O.

**WELDING APPARATUS (Electric Arc.)** General Electric Co., Schenectady, N. Y.

**WELL CONTRACTORS (Oil, Artesian, etc.)** Virginia Machy. & Well Co., Richmond, Va.

**WHEELS AND AXLES.** Carnegie Steel Co., Pittsburgh, Pa.

**WIRE (All Kinds.)** American Steel & Wire Co., Chicago. Jones & Laughlin Steel Corp., Pittsburgh, Pa.

Ryerson & Son, Inc., Jos. T., St. Louis and New York City.

Seneca Wire & Mfg. Co., Fostoria, O.

**(Barbed Wire, etc.)** American Steel & Wire Co., Balto., Md. Gulf States Steel Co., Birmingham, Ala. Youngstown Sheet & Tube Co., Youngstown, Ohio.

**(Fence.)** Cyclone Fence Co., Waukegan, Ill. Stewart Iron Works Co., Cincinnati, O.

**(Flat and Round.)** American Steel & Wire Co., Balto., Md. Roebling's Sons Co., John A., Trenton, N. J.

Seneca Wire & Mfg. Co., Fostoria, O.

**(Galvanized and Annealed.)** Gulf States Steel Co., Birmingham, Ala. Seneca Wire & Mfg. Co., Fostoria, O.

**Cloth (Iron, Steel, Copper, Brass, etc.)** Harrington & King Perf. Co., Chicago. Roebling's Sons Co., John A., Trenton, N. J.

Seneca Wire & Mfg. Co., Fostoria, O.

**Goods.** Cyclone Fence Co., Waukegan, Ill.

**Rope (Transmission, Hoisting, Haulage.)** American Cable Co., New York City. American Steel & Wire Co., Chicago, Ill. Roebling's Sons Co., John A., Trenton, N. J.

**Rope Clips.** American Steel & Wire Co., Balto., Md.

**Stapling.** Seneca Wire & Mfg. Co., Fostoria, O.

**(Telephone and Telegraph.)** American Steel & Wire Co., Balto., Md.

**(Welding.)** American Steel & Wire Co., Chicago, Ill. Roebling's Sons Co., John A., Trenton, N. J.

Seneca Wire & Mfg. Co., Fostoria, O.

**WOODWORK (Cabinet.)** Mitchell Mfg. Co., Robert, Cincinnati, O.

**ZINC META ARSENITE (Wood Preservative.)** Gulf States Creos. Co., Hattiesburg, Miss.

# PITTSBURGH DES MOINES



## Uniform Water Pressure for Wauwatosa

Wauwatosa, Wisconsin is a residential city securing water from four deep wells equipped with automatically controlled deep well turbine pumps, and one deep well equipped with airline and compressor under manual control. For average daily consumption this supply was ample, but Wauwatosa's system is subjected to high peak requirements—particularly during the hot dry weather of the summer months.

Wauwatosa's problem was to meet most efficiently this abnormal demand—to provide an improved, uniform, water pressure with no interruption to service and the least total plant investment. They could have installed additional wells with new pumps, and increased their water mains—but Wauwatosa's municipal water works officials wisely decided upon elevated storage.

In 1927 Wauwatosa installed a 500,000 gallon "Pittsburgh-Des Moines" elevated tank and in 1928 a 1,000,000 gallon "Pittsburgh-Des Moines" elevated tank. This new elevated storage provides a uniform water pressure to take care of their maximum consumption, and permits a simplified pumping schedule during the off-peak hours on the water lines. It also prevents tearing up city streets to install new water mains.

The same, or a similar water supply problem as described above today confronts many American towns and cities. "Pittsburgh-Des Moines" has had 38 years experience in the design, manufacture and erection of elevated water tanks, standpipes, steel reservoirs and water treating plants. The facilities of our two shops, skilled field crews and experienced engineers are at your disposal.

## QUALITY TANKS



New Catalog—  
FREE

"Modern Water Storage" contains 28 pages, in convenient file size, of reliable water supply information, interesting photographs and authentic engineering designs, data, tables and descriptions of the various "Pittsburgh-Des Moines" products. Write for your copy today.

## Pittsburgh - Des Moines Steel Company

3420 Neville Island, Pittsburgh, Pa.  
326 Palmer Building, Atlanta, Ga.

Des Moines  
Chicago

Seattle  
San Francisco

New York  
Dallas

# Index of Advertisements

|          |  |  |  |
|----------|--|--|--|
| <b>A</b> | Dietrich Brothers ..... 91<br>Dow & Smith ..... 26<br>Dunning & Boschert Press Co. 71  | <b>M</b>                                 | Smith & Son Co., Oscar T. .... 74<br>Smith Co., S. Morgan ..... 23<br>Main, Inc., Chas. T. .... 26<br>Manistee Iron Works Co. .... 65<br>Marine Metal & Supply Co. .... 77<br>Martin, Joe B. .... 26<br>McCallum Inspection Co. .... 26<br>McCravy Co., J. B. .... 27<br>Meigs, Bassett & Slaughter,<br>Inc. .... 27<br>Milburn, Heister & Co. .... 26<br>Model Land Co. (Flagler Sys-<br>tem) .... 80<br>Mott Core Drilling Co. .... 27<br>Moyer Co., Tilghman ..... 27<br>Mundt & Sons, Chas. .... 71<br>Myers & Bro. Co., F. E. .... 65 |
| <b>B</b> | Albert & Davidson Pipe Corp. 77<br>Albert Pipe Supply Co. .... 77<br>Allis-Chalmers Mfg. Co. .... 15<br>Alpaugh & Sons, Chas. W. .... 26<br>Alpha Portland Cement Asso. 13<br>American Cable Co. .... 17<br>American Creosote Works, Inc. 88<br>American Elev. & Machine Co. 85<br>American Gas Asso. .... 24<br>American Limestone Co. .... 16<br>American Rolling Mill Co. .... 32<br>American Tel. & Tel. Co. .... 25<br>Andrews, Co., A. H. .... 27<br>Arundel Corporation ..... 16<br>Atlanta & West Pt. Railway. 80<br>Atlantic Creosoting Co. .... 88<br>Atlantic Gulf & Pacific Co. .... 16<br>Audit Company of the South.. 26<br>Austin-Western Road<br>Machinery Co. .... 29   | <b>E</b>                                 | Earle Gear & Machine Co.... 31<br>Engineering Service Corp. .... 26<br>Eppinger & Russell Co. .... 88<br>Equipment Corp. of America. 77<br>Erdle Perforating Co. .... 71   |
| <b>C</b> | Babcock & Wilcox Co. .... 19<br>Bacharach & Co., E. W. .... 86<br>Baltimore Commercial Bank. 74<br>Barstow & Co., W. S. .... 27<br>Belmont Iron Works. .... 90<br>Bertsch & Co. .... 12<br>Bessemer Galvanizing Works. 87<br>Bethlehem Steel Co. .... 90<br>Blair, Algernon ..... 26<br>Bristol Steel & Iron Works... 90<br>Brooks-Fisher Co. .... 83<br>Brown Wood Preserving Co. 88<br>Bucyrus-Erie Co. .... 14<br>Buffalo-Springfield Roller Co. 14<br>Burkes, J. V. & R. T. .... 26<br>Bylesby Engineering & Man-<br>agement Corp. .... 27   | <b>F</b>                                 | Fiske-Carter Construction Co. 26<br>Fraley & Son, Lawrence V. .... 14<br>Friend & Co. .... 16<br>Froehling & Robertson. .... 27  |
| <b>D</b> | Caldwell Co., W. E. .... 88<br>Carey Co., Phillip ..... 11<br>Caroline Steel & Iron Co. .... 91<br>Cast Iron Pipe Research Asso. 20<br>Cement Gun Construction Co. 87<br>Central Iron & Steel Co. .... 86<br>Central Pipe & Supply Co.... 77<br>Charleston Dry Dock & Mch.<br>Co. .... 83<br>Charlotte Leather Belting Co. 83<br>Chase, William J. J. .... 26<br>Chattanooga Boiler & Tank Co. 92<br>Chicago Bridge & Iron Works 92<br>Chicago Perforating Co. .... 71<br>Cincinnati Mchry. & Sup. Co. 77<br>Classified Opportunities ..... 76<br>Cleveland Tractor Co. .... 9<br>Cole Mfg. Co., R. D. .... 92<br>Consoer, Old & Quinlan, Inc. 26<br>Converse & Co., J. B. .... 26<br>Cornell-Young Co. .... 26<br>Cowper Co., The John W.... 26<br>Cramer, Robert ..... 26<br>Crucible Steel Casting Co. ... 83 | <b>G</b>                                 | Galveston Wharf Co. .... 81<br>Gardner & Howe ..... 26<br>Georgia Iron Works. .... 65<br>Georgia Marble Co. .... 71<br>Georgia Sand & Gravel Co.... 16<br>Glamorgan Pipe & Fdry. Co. 67<br>Greenpoint Iron & Pipe Co.... 77<br>Greiner & Co., J. E. .... 26<br>Gruendler Crusher & Pulver-<br>izer Co. .... 16<br>Gulf States Steel Co. .... 8<br>Gulf Refining Co. .... 69<br>Gunite Concrete & Constr. Co. 87<br>Gunite Construction Co. .... 87   |
| <b>H</b> | Hall, J. Henry ..... 26<br>Hardaway Contracting Co.... 30<br>Harrington & King Perf. Co. 70-71<br>Harrub Engr. Co., C. N. .... 26<br>Heath Co., J. S. .... 34<br>Highland Pines Inn. .... 80<br>Hill & Griffith Co. .... 87<br>Hoosier Engineering Co. .... 26<br>Hornbuckle Contracting Co. 26<br>Hudson Pipe & Supply Co. .... 77<br>Huey, S. E. .... 26<br>Hunt Co., Robert W. .... 27<br>Hyman-Michaels Co. .... 77  | <b>I</b>                                 | Ohio Power Shovel Co. .... 100<br>Owen Bucket Co. .... 5<br>Owensboro Sewer Pipe Co. .... 67   |
| <b>J</b> | Ingalls Iron Works ..... 68<br>International Filter Co. .... 86<br>International Harvester Co. ... 28  | <b>R</b>                                 | Pacific Flush-Tank Co. .... 67<br>Pennsylvania Drilling Co. .... 27<br>Phoenix Iron Co., The. .... 91<br>Picard Laboratories ..... 26<br>Pipe Railing Construction Co. 71<br>Pittsburgh-Des Moines Steel<br>Co. .... 93<br>Pittsburgh Testing Laboratory 27<br>Poe Piping & Heating Co. .... 26<br>Preacher & Co., Inc., G. Lloyd 26<br>Progressive Mfg. Co. .... 83<br>Proposal Advertisements.... 75-76<br>Provident Savings Bank &<br>Trust Co. .... 74   |
| <b>K</b> | Jackson Lumber Co. .... 83<br>Jefferson Foundry Co. .... 83  | <b>S</b>                                 | Reading Iron Co. .... 21<br>Resale Department ..... 77<br>Richmond Fdry. & Mfg. Co. .... 83<br>Roanoke Iron & Bridge Wks. 90<br>Roberts Filter Mfg. Co. .... 86<br>Robins & Co., A. K. .... 71<br>Robinson & Orr ..... 77<br>Roebling's Sons Co., John A. ... 18<br>Rust Engineering Co. .... 85<br>Ryerson & Son, Jos. T. .... 34   |
| <b>L</b> | Kansas City Bridge Co. .... 26<br>Kennedy-Riegger Drilling Co. 27<br>Kerlow Steel Flooring Co. ... 86  | <b>T</b>                                 | Seaboard Public Service Co. ... 63<br>Seavers Co., Jas. B. .... 14<br>Schofield's Sons Co., J. S. .... 92<br>Shepard Niles Crane & Hoist<br>Co. .... 99<br>Shore Line Builders, Inc. .... 26<br>Simplicity System Co. .... 14<br>Sirrine & Co., J. E. .... 27<br>Smallman-MacQueen Const. Co. 26   |
| <b>M</b> | La Bour Co. .... 22<br>Law & Co., A. M. .... 74<br>Layne & Bowler, Inc. .... 65<br>Leadite Co. .... 34<br>Lee Clay Products Co. .... 67<br>Lee Engineering Corp., W. S. 26<br>Lima Excavator Sales Agency 77<br>Lockwood-Greene Engrs., Inc. 27  | <b>U</b>                                 | Table of Contents ..... 33<br>Texas Power & Light Co. .... 34  |
| <b>N</b> | National Equipment Corp. .... 6-7<br>National Paving Brick Asso. .... 12<br>National Traffic Guard Co. .... 14<br>Northwest Engineering Co. .... 3<br>North Carolina Granite Co. .... 87<br>Nuveen & Co., John ..... 74  | <b>V</b>                                 | U. S. Pipe & Foundry Co. .... 2  |
| <b>O</b> | Ohio Power Shovel Co. .... 100<br>Owen Bucket Co. .... 5<br>Owensboro Sewer Pipe Co. .... 67   | <b>W</b>                                 | Virginia Bridge & Iron Co. .... 91<br>Virginia Engineering Co. .... 26<br>Virginia Machinery & Well Co. 67   |
| <b>P</b> | Pacific Flush-Tank Co. .... 67<br>Pennsylvania Drilling Co. .... 27<br>Phoenix Iron Co., The. .... 91<br>Picard Laboratories ..... 26<br>Pipe Railing Construction Co. 71<br>Pittsburgh-Des Moines Steel<br>Co. .... 93<br>Pittsburgh Testing Laboratory 27<br>Poe Piping & Heating Co. .... 26<br>Preacher & Co., Inc., G. Lloyd 26<br>Progressive Mfg. Co. .... 83<br>Proposal Advertisements.... 75-76<br>Provident Savings Bank &<br>Trust Co. .... 74   | <b>Y</b>                                 | Winston-Salem Industrial Com-<br>mission ..... 79<br>Winston-Salem Southbound<br>Railway Co. .... 79<br>Wood & Co., R. D. .... 67<br>Woodstock Slag Corp. .... 16  |
| <b>Q</b> | Reading Iron Co. .... 21<br>Resale Department ..... 77<br>Richmond Fdry. & Mfg. Co. .... 83<br>Roanoke Iron & Bridge Wks. 90<br>Roberts Filter Mfg. Co. .... 86<br>Robins & Co., A. K. .... 71<br>Robinson & Orr ..... 77<br>Roebling's Sons Co., John A. ... 18<br>Rust Engineering Co. .... 85<br>Ryerson & Son, Jos. T. .... 34   | <b>Z</b>                                 | York Safe & Lock Co. .... 73<br>Youngstown Sheet & Tube Co. 10   |
| <b>R</b> | Seaboard Public Service Co. ... 63<br>Seavers Co., Jas. B. .... 14<br>Schofield's Sons Co., J. S. .... 92<br>Shepard Niles Crane & Hoist<br>Co. .... 99<br>Shore Line Builders, Inc. .... 26<br>Simplicity System Co. .... 14<br>Sirrine & Co., J. E. .... 27<br>Smallman-MacQueen Const. Co. 26   | <b>Classified Opportunities</b> ..... 76 |  |
| <b>S</b> | Seaboard Public Service Co. ... 63<br>Seavers Co., Jas. B. .... 14<br>Schofield's Sons Co., J. S. .... 92<br>Shepard Niles Crane & Hoist<br>Co. .... 99<br>Shore Line Builders, Inc. .... 26<br>Simplicity System Co. .... 14<br>Sirrine & Co., J. E. .... 27<br>Smallman-MacQueen Const. Co. 26   | <b>Professional Directory</b>            |  |
| <b>T</b> | Seaboard Public Service Co. ... 63<br>Seavers Co., Jas. B. .... 14<br>Schofield's Sons Co., J. S. .... 92<br>Shepard Niles Crane & Hoist<br>Co. .... 99<br>Shore Line Builders, Inc. .... 26<br>Simplicity System Co. .... 14<br>Sirrine & Co., J. E. .... 27<br>Smallman-MacQueen Const. Co. 26   | <b>Cards</b> ..... 26-27                 |  |
| <b>U</b> | Seaboard Public Service Co. ... 63<br>Seavers Co., Jas. B. .... 14<br>Schofield's Sons Co., J. S. .... 92<br>Shepard Niles Crane & Hoist<br>Co. .... 99<br>Shore Line Builders, Inc. .... 26<br>Simplicity System Co. .... 14<br>Sirrine & Co., J. E. .... 27<br>Smallman-MacQueen Const. Co. 26   | <b>Proposal Advertisements</b> .. 75-76  |  |
| <b>V</b> | Seaboard Public Service Co. ... 63<br>Seavers Co., Jas. B. .... 14<br>Schofield's Sons Co., J. S. .... 92<br>Shepard Niles Crane & Hoist<br>Co. .... 99<br>Shore Line Builders, Inc. .... 26<br>Simplicity System Co. .... 14<br>Sirrine & Co., J. E. .... 27<br>Smallman-MacQueen Const. Co. 26   | <b>Resale Department</b> ..... 77        |  |
| <b>W</b> | Seaboard Public Service Co. ... 63<br>Seavers Co., Jas. B. .... 14<br>Schofield's Sons Co., J. S. .... 92<br>Shepard Niles Crane & Hoist<br>Co. .... 99<br>Shore Line Builders, Inc. .... 26<br>Simplicity System Co. .... 14<br>Sirrine & Co., J. E. .... 27<br>Smallman-MacQueen Const. Co. 26   | <b>Classified Index</b> ..... 82         |  |

See Classified Index for complete list of advertisers and products advertised. When corresponding with these firms, mention the MANUFACTURERS RECORD.